SHOUT
SHARE
IT

Library of

Wellesley College.

Purchased from
The Horsford Fund.

No 55341

MEMOIRS

OF THE

TORREY BOTANICAL CLUB

VOLUME VI

NEW YORK
1896–1899

55341

Scient
QK
1
Tb2
6-7

CONTENTS.

PAGES

No. 1.

An Enumeration of the Plants Collected in Bolivia by Miguel Bang.—III. By Henry H. Rusby. (Issued 1896) 1–130

No. 2.

A Revision of the North American Isotheciaceae and Brachythecia. By Abel Joel Grout. (Issued July 30, 1897. 131–210

No. 3.

The Life History of *Sphaerella lacustris* (*Haematococcus pluvialis*). Plates 86, 87. By Tracy Elliot Hazen. (Issued May 8, 1899)..... 211–246

No. 4.

A Review of the Genera of Ferns proposed prior to 1832. By Lucien Marcus Underwood. (Issued December 1, 1899)..... 247–283

No. 5.

Notes on Lichen Distribution in the Upper Mississippi Valley. By Bruce Fink. (Issued December 1, 1899)... 285–306

MEMOIRS
OF THE
TORREY BOTANICAL CLUB.

Vol. VI. No. 1.

On the Collections of Mr. Miguel Bang in Bolivia.—Part III.

By Henry H. Rusby.

CORRECTIONS, ADDITIONS AND NOTES REFERRING TO PARTS I. AND II.*

226. (Omitted in Part II. of my Enumeration) is *Euphorbia pilulifera* L. Yungas, 1890.

230. (Missed in Part I.) is *Polygala Bangiana* Chodat, sp. n. Bull. Herb. Boiss. 4: 234. Yungas, 1890.

256b. (Missed in Part II.) is *Siphocampylos corymbiferus* Pohl, Fl. Bras. Ic. 2: 112. *pl. 175*. Yungas, 1890.

384. (Missed in Part I.) is *Sabicea cinerea* Aubl. Pl. Gui. 1: 192. *pl. 75*. Yungas, 1890.

430. (Enumerated as *Tibouchina stenopetala* Cogn.). Of this M. Cogniaux writes as follows:

En examinant attentivement cette plante, il me semble, que ce n'est pas le *T. stenopetala*, mais bien l'une des formes du très variable *T. longifolia* Baill. Le *T. stenopetala* est une plante plus grêle, moins velue ; les soies du calice sont *étalés* et *glanduleuses*, les étamines sont plus inegales, les plus grandes ayombant le connectif notablement plus long, etc.

500. (Enumerated as *Centropogon Surinamensis* (L.) Presl), is a new species shortly to be published by A. Zahlbruckner in Bull. Torr. Bot. Club.

520. (Published as *Lisianthus ovalis* R. & P.) is being studied by Dr. Gilg, who thinks the determination wrong.

* Mem. Torr. Bot. Club, 3: Part 3, and 4: Part 3.

698. (Published as *Monnina cestrifolia* H. B. K.) is *Monnina Autraniana* Chodat, Bull. Herb. Boiss, 3: 543.

738. (Published as *Siphocampylos giganteus latifolius* Britton) is a new species of *Centropogon*, shortly to be published by A. Zahlbruckner in Bull. Torr. Bot. Club.

843. *Erythroxylon Bangii* Rusby has been examined in the chemical laboratory of Messrs. Parke, Davis & Co., for the presence of cocaine in its leaves, with negative results.

969. (Published as *Cacabus parviflorus* Rusby) is *Physalis viscosa* L., as kindly pointed out by Mr. Rydberg.

Enumeration of Nos. 1001-1769.

RANUNCULACEAE.

Clematis sericea H. B. K. Nov. Gen. 5: 37. Espirito Santo, near Cochabamba, 1891 (1271).

Thalictrum podocarpum H. B. K. Nov. Gen. 5: 38. Vic. Sorata, May, 1892 (1314) = 758 and 893 and Rusby's 501 and 502.

Anemone triternata Vahl, Symb. 3: 74. *pl. 65*. Near snow line, Mt. Tunari, 1891 (1041)= Rusby's 1753.

DILLENIACEAE.

Davilla rugosa Poir. Encyc. Meth. Supp. 2: 457. Var. (?) CAPITATA n. var. Distinguished from all specimens of the type by its very abundant capitate clustered flowers. Apparently intermediate between *D. rugosa* and *D. elliptica*.

Between Mapiri and Tipuani, July–Aug., 1892 (1524). Also collected by Pearce at Chailla.

DAVILLA LECHLERI sp. n.

Finely papillose-scabrous throughout, the branches of the inflorescence sparsely coarse-hairy; branches elongated, terete; petioles 1–1.5 cm. long, margined, with dilated base, blades 9–13 cm. long, 5–7 cm. broad, oval, with base very abruptly contracted into the petiole, apex abruptly produced into an obtusish point 3–6 mm. long and broad, and margin serrate with rather distant, erect teeth spinulose toward the apex, obsolete toward the base, pale, membranaceous, the 13–15 pairs of primaries distinctly impressed above; floral leaves scarce, obovate, 2 cm. long or less; panicles terminal and in the upper axils, 8–16 cm. long, 5–12 cm. broad, the branches distant and lax, the flowers rather densely clustered, sessile to sub-sessile; mature buds 3–3.5 mm. in diameter; petals 2 or 3, strongly veined.

Espirito Santo, 1891 (1249).

The same as Lechler's 2316 from Peru. Nearly Jenman's Guiana no. 2146, but that has short thick petioles and thick sharply ribbed blades.

DAVILLA PARVIFLORA sp. n.

Scabrous throughout, the branches rather stout, flexuous, terete, or obscurely angled above, brown, the internodes very unequal; petioles 5–10 mm. long, margined, dilated at the base; blades 6–12 cm. long, 3–6 cm. broad, oval to oval-obovate, with base abruptly contracted into the petiole, apex rounded and very slightly obtusely pointed, and margin sinuate-serrate with mucronate teeth, especially toward the apex; thickish, rigid, midrib impressed above, the 13–16 pairs of primaries parallel, slightly curved, angle about 60°, obscure above, finely and sharply prominent underneath, connected by fine secondaries, which are reticulate; panicles terminal, the branches in the axils of the floral leaves mostly short-peduncled, about 4 cm. long, loosely flowered; bracts oblong, gray-hairy, about 1 mm. long; flowers on short stout angled pedicels; buds globose, 2.5 mm. in diameter; petal one, or a second small one; filaments but little thickened above, style very thick, one-half longer than the stamens.

Between Guanai and Tipuani, April–June, 1892 (1377).

DOLIOCARPUS FERRUGINEUS sp. n.

Coarse, the branches thick but weak, angled, below sparsely, above densely ferruginous-hirsute, the hairs divaricate or slightly retrorse, internodes mostly less than 3 cm. long; petioles very thick, 1–2 cm. long, hirsute like the upper parts of branches; blades 1–3 dm. long, 6–12 cm. broad, irregularly oval with subcuneate base, acute or slightly acuminate apex, and sinuately serrate margin, the teeth distant, coarse, mucronate; membranaceous and thin, above dark, nearly smooth except upon the scabrous impressed midrib and 12–14 pairs of primaries, which are nearly straight, diverging at about 45°, underneath pale yellowish green, sparsely hirsute, densely so with retrorse hairs upon the midrib and sharply prominent primaries, which are connected by the numerous fine secondaries; flowers in simple or slightly compound sessile axillary clusters, the pedicels 3–10 mm. long, slightly thickened at the apex, hirsute; mature buds globose-obovoid, 4 or 5 mm. long; filaments only slightly thickened above.

Espirito Santo, 1891 (1261 and part of 1266).

ANONACEAE.

Guatteria criopoda DC. Syst. 1: 505 (?). Espirito Santo, 1891 (1176).

Specimen more ferruginous than either Matthew's 3054 or my 1240, and the leaves and flowers much larger.

MENISPERMACEAE.

Cissampelos Pareira L. Sp. Pl. 1031. Mapiri, July–August, 1892 (1552a and 1553) = Rusby's 1444, etc.

BERBERIDEAE.

Berberis Agapatensis Lechl. Berb. Austr. 44 (?). A little above Cochabamba, 1891 (1091).

Spines larger (some 5-parted) and leaves broader than in the type.

BERBERIS PHYLLACANTHA sp. n.

Stout, densely branched and densely leafy, the branches at an angle of about 45 degrees, slender, nearly straight; branches nearly terete, blackish or dark brown with grooved fissures; branchlets terete, not fissured, scurfy-puberulent; spines phylloid, 12–24 mm. long, with well-differentiated petioles and veins, of one or two pairs of lateral and a terminal division, all similar, triangular-subulate and very pungent, yellowish-brown; branchlets about 6-leaved, the scales blackish, of similar form and markings to the petioles of the spines, closely appressed; petioles distinct but mostly concealed by the scales, 2–5 mm. long, dilated downward, orange-colored, 5–7-costate; blades 1–2.5 cm. long, 5–15 mm. broad, obovate with cuneate base, pungent broad apex and about 3 pairs of large triangular pungent teeth with obtuse sinuses, margin slightly revolute; very thick and rigid, glabrous, above bright or pale green and shining, underneath yellowish, the veins prominent on both sides, especially underneath; flowers mostly solitary, from reddish bracts 7 mm. long by 10–12 mm. broad, on scabrous upwardly thickened pedicels 6–7 mm. long, the sepals orange-yellow with a red middle portion; fruit black, glaucous, globose, 8 mm. in diameter, tipped by the style and large stigma.

Sorata, Nov., 1892 (1614).

The same as Mandon's no. 862.

CAPPARIDEAE.

Cleome glandulosa R. & P. ex DC. Prod. 1: 238. Espirito Santo, 1891 (1197) = Rusby's 734.

Cleome aculeata L. Syst. Ed. 12, 3: 232. Guanai, July, 1892 (1585.)

CAPPARIS BANGII sp. n.

Minutely scabrous throughout, the sepals light gray outside; branchlets terete, flexuous, the internodes about 1–2 cm. long; stipules setaceous, caducous; petioles 5–7 mm. long, broad; blades 5–8 cm. long, 2–4 cm. broad, ovate with rounded base and short-pointed obtusish apex, coarsely sinuate-dentate toward the apex, coriaceous and rigid, above dark green and finely lepidote, underneath pale, venation inconspicuous above, the midrib and 5 or 6 pairs of primaries somewhat prominent underneath; flowers solitary in the axils, on stout angled gray peduncles 1.5 cm. long; bud oblong, obtuse; sepals valvate, free, 2 cm. long, linear-oblanceolate, obtuse, gray without, reddish (?) and scurfy within; petals a little exceeding the sepals, apparently rose-colored; stamens very numerous, shorter than the pistil; fruit not seen.

Tipuani, Jan., 1893 (1642).

VIOLARIEAE.

Viola veronicaefolia Pl. et. Lind. Ann. Sci. Nat. (IV.) 17: 121. Vic. Mapiri, 12,000 ft., Sept., 1892 (1578) = 823.

Viola pygmaea Juss.; Poir. in Lam. Encyc. 8: 630. Vic. Mapiri, 12,000 ft., Sept., 1892 (1579 and 1579a). Also collected by Mandon and by Pearce in the Andes of Yungas.

VIOLA BANGII (= *V. nivalis* Benth. Pl. Hartw. 160, not R. & S.). Sorata, Nov., 1892 (1616) = Mandon's 940, and collected by Jameson and others in Ecuador.

RINOREA VIRIDIFOLIA sp. n.

Glabrous, fruticose, much branched, the branches and branchlets slender, ascending, grayish-brown; leaves opposite; petioles 3–10 mm. long, dark, stout; blades of the pair slightly unequal, 4–10 cm. long, 1.5–5 cm. broad, oblong to oval or obovate, with sub-rotund or blunt base, abruptly pointed obtuse apex and slightly sinuately serrate margin, the teeth rounded; bright green both sides, membranaceous; racemes terminal, about 2.5–4 cm. long exclusive of the peduncle, which is one-half as long, loosely flowered; bracts scarious, two-fifths the length of the pedicels, broadly ovate, keeled; pedicels erect, stout, thickened above, dark, 2–3 mm. long; mature bud lance-ovoid, obtuse, nearly 5 mm. long; sepals one-fourth as long as the petals, nearly semicircular, whitish; petals lanceolate, yellowish with whitish recurved rounded apex; stamens entirely distinct; scale at back of filament nearly as long as the filament, oval, with rounded apex; anther as long as filament; appendage of connective triangular-acuminate, acute, forming two broad wings to the anther, the terminal subulate portion

as long as the anther, not equalling the petals; ovary coarsely hirsute; style slenderly conical, pubescent, slightly exceeding the anther-appendages; fruit not seen.

Between Guanai and Tipuani, April–June, 1892 (1337).

The same as Spruce's 1855b, from Tarapota, Peru. Probably the same as Rusby's 2493 in advanced fruit, but that specimen is too poor for determination.

Sauvagesia erecta L. Sp. Pl. 203. Espirito Santo, 1891 (1216) = Rusby's 1076.

BIXINEAE.

Bixa Orellana L. Sp. Pl. 512. Espirito Santo, 1891 (1174). The white-flowered form = Rusby's 1310.

POLYGALEAE.

(Communicated by Dr. A. Chodat.)

Polygala Boliviensis A. W. Bennett, Journ. Bot. 8: (1879) 171. Vic. Cochabamba, 1891 (1010).

Polygala acuminata (Willd.) Chodat, Mon. Polyg. 2: 45. Vic. Guanai, July, 1892 (1588).

Monnina aestuans (L.) DC. Prod. 1: 338. Vic. Sorata, May, 1892 (1305).

Monnina herbacea DC. Prod. 1: 340.

Habita, forma sepalorum, appendicibus auriculariformibus, styli cum *M. macrostachya* R. et P. convenit, differt stipulis spiniformibus deficientibus, staminibus 6 (loco 8), duobus utraque parte coaliti et formam fructu (deficiens).

Vic. Sorata, May, 1892 (1309).

Monnina Rusbyi Chodat sp. n.

Subherbacea ad 30 cm. longa, radice subsimplice; caule supra basin vel superne ramoso, ramis tenuibus ut tota planta glandulosopilosis, inde leviter rufescens. Folia linearia breviter petiolata. Racemi suproaxillares demum elongati, laxiflori. Rachis post defloriam glandulis spiniformibus remotis asperata. Flores ad 3–4 mm. longi. Sepala 3 libera lanceolata. Alae longe et distincte unguiculatae limbo late suborbiculari. Antherae in tubo staminoli sessiles vel subsessiles. Ovarium anguste ellipticum; stigma inferius biappendiculatum inde emarginatum. Fructus samaroideus, ala parva.

Ab omnibus hujus generis indumento, alis unguiculatis et forma stigmatis recedit.

Vic. Cochabamba, 1891 (1002).

VOCHYSIACEAE.

VOCHYSIA MAPIRENSIS sp. n.

Glabrous, or the peduncles, etc., sparsely puberulent; branches blackish, sub-terete; petioles 5–10 mm. long, blackish, stout and broad; blades (only the upper seen) 8–16 cm. long, 2.5–5 cm. broad, oblong-elliptical, with acute base, minutely retuse apex and entire strongly revolute margin; thick and rigid, pale, midrib strongly impressed above, very prominent and terete underneath, veins prominent both sides, especially beneath, finely and strongly reticulate, the primaries very numerous and unequal; panicles terminal and axillary, 1.5–3 dm. long including the peduncle, 2.5–5 cm. broad, the peduncle and rhachis stout; branchlets mostly 2-flowered, their stout peduncles and pedicels each about 4 mm. long; flower about 12 mm. long, exclusive of the obtuse spur which is 10 mm. long, each falcately curved, in opposite directions, the spur a little more strongly; calyx cylindrical-hemispherical with oblique mouth, 3 mm. long, 2 mm. broad, the smaller lobes semicircular or broader, unequal; larger sepal about twice the length of the corolla, ciliate; large petal 6.5 mm. long, 5 mm. broad, obovate with rounded apex, the others 5.5 mm. long, obcordate; anther about equalling the strongly clavate stigma; staminodia none; fruit not seen.

Between Guanai and Tipuani April–June, 1892 (1382). The same as Rusby's 610. Differs from *V. divergens* in form of leaf-base and spur and in the obtuse bud.

Qualea parviflora Mart. Nov. Gen. 1: 135. *pl. 81.* Between Tipuani and Guanai, Dec., 1892 (1663). The glabrate form.

CARYOPHYLLEAE.

Cerastium arvense L. Sp. Pl. 438. Near snow line, Mt. Tunari, 1891 (1036).

Drymaria cordata (L.) Willd. in R. and S. Syst. Veg. 5: 406. Turedon, 1891 (1136)=Rusby's 1182.

PORTULACEAE.

PORTULACA ELONGATA sp. n.

Densely pilose on the younger parts by the capillary divided stipules; stems ascending, much branched from the base, the branches erect or ascending, slender, 1–2.5 dm. long, irregularly angled, gray-green; stipules reduced to tufts of hair, persistent; leaves terete, obtuse, 8–12 mm. long; flowers sessile, the bud 1 cm. long; sepals nearly as long as the corolla, very broad, completely enclosing the flower except the apex, hyaline, light-purple,

adnate (or agglutinate?) to the base of the petals; corolla deep purple; capsule hyaline, 1.5 mm. broad; seeds black or blackish, muricate.

Turedon, 1891 (1140).

HYPERICINEAE.

Hypericum struthiolaefolium Juss. Ann. Mus. Par. 3: 161. *pl. 16. f. 2.* Near snow line, Mt. Tunari, 1891 (1026) = Mandon's 790.

Caopia tomentosa (R. & P.) Kuntze, Rev. Gen. Pl. 59. Vic. Sorata, Nov., 1892 (1724) = Rusby's 719.

Caopia Guyanensis (Aubl.) Kuntze, Rev. Gen. Pl. 58. Between Tipuani and Guanai, Dec., 1892 (1695) = Rusby's 722.

GUTTIFERAE.

Clusia—species apparently undescribed, and near *C. cuneata;* but I have only pistillate flowers in a young state, and the material does not warrant a description. Between Tipuani and Guanai, Dec., 1892 (1718).

TERNSTROEMIACEAE.

Norantea anomala H. B. K. Nov. Gen. 8: 218. *pl. 6. f. b.*? Espirito Santo, 1891 (1194). Mapiri, July–Aug., 1892 (1544). Because of the doubtfulness of this determination and the incompleteness of the description cited above, a complete description is here appended.

Glabrous; stems elongated, gray-brown, terete; petioles stout, 5–10 mm. long; blades 5–10 cm. long, 2–4 cm. broad, obovate, with rounded apex, cuneate base continued into the petiole and entire margin, coriaceous, above light-green, the midrib slightly elevated and veins obscure, underneath ferruginous, the midrib prominent, veins obscure, the primaries very numerous; glands rather small, in two somewhat irregular rows, the inner a little nearer to the margin than to the midrib, its glands a little larger than those of the outer row; spike (only one seen) 5.5 dm. long, the rhachis terete, very stout, loosely flowered; bracts entire, if of full size about 2 cm. long, including the pedicel which is about 1 cm. long and gradually broadened into the obovate strongly concave and slightly galeate, verrucose hood; flowers sessile, the bud globose or broader, 3 mm. in diameter; calyx whitish, about one-third as long as the red-brown corolla; petals coherent at the base, thick and dry; stamens 5, the filaments flat-

tened, very short and equally as broad, the imbricated anthers nearly circular, including the broad yellowish-white wings.

This differs from the type in texture, apex and surface of leaves, but is in other respects exactly the same. It is probably distinct and the two may form the basis of a distinct genus.

Erotium subintegrifolium Rusby, Mem. Torr. Bot. Club, 3 : Part 3, 9. Mapiri, July–Aug., 1892 (1489) = 386.

Saurauja Rusbyi Britton, Bull. Torr. Bot. Club, 16 : 64. Vic. Mapiri, 8000 ft. Jan., 1893 (1742) = Rusby's 482.

KIELMEYERA PANICULATA sp. n.

Glabrous; branches stout, reddish-brown, leafy; petioles 5–10 mm. long, stout, broad; blades 6–10 cm. long, 2.5–6 cm. broad, obovate with very abruptly contracted base, rounded or obscurely pointed apex and entire margin, coriaceous, pale, midrib channelled above, prominent beneath, veins slightly reticulate above, more so beneath; panicles terminal, short-peduncled, 1 dm. long, 6 cm. broad, loosely flowered, naked; pedicels proper 5 mm. long, stout, thickened above, striate; sepals 5, ovate, blunt, 5 mm. long, 3–4 mm. broad; corolla in bud broadly ovoid, minutely apiculate, when expanded 2 cm. broad, cream-colored (?); fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1731).

MARILA LAXIFLORA sp. n.

Glabrous except the pedicels, etc.; branches stout, soft, gray-brown, terete, the internodes about 4 cm. long; petioles 12–20 mm. long, becoming reflexed; blades 1–2.5 dm. long, 6–10 cm. broad, ovate-oval, with rounded base, abrupt short obtuse point and entire margin, above dark green, the midrib and 10–15 pairs of primaries slightly impressed, underneath yellowish-green, the midrib and primaries strongly prominent and terete, the secondaries connecting the latter with one another and, on the upper side with the midrib, the primaries inter-arching near the margin; racemes axillary, 1.5–2 dm. long including the peduncle, loosely flowered; rhachis and pedicels angled, minutely ferruginous-puberulent; pedicels divaricate, about 3 mm. long, stout, enlarged at base and apex; flowers campanulate; the calyx and corolla 1 cm. long, the stigma exserted to about one-third their length; sepals thick, keeled; petals delicate, the inner sub-contorted; stamens in 4 dense clusters; gland of the connective one-half as long as the anther, oblong, inflexed, light yellow with a black tip; style angled, clavate; stigma capitate, black, slightly 2-lobed; fruit immature, ascending, tipped with the slightly accrescent and glutinous stigma.

Between Tipuani and Guanai, Dec., 1892 (1648). Also collected by Pearce.

MALVACEAE.

Sida urens L. Sp. Pl. ed. 2, 963. Between Guanai and Tipuani, Apr.–June, 1892 (1446) = Rusby's 1454 and 1454a.

SIDA BAKERIANA sp. n.

Erect, stout, much branched, the branches elongated, straight, nearly horizontal, pilose, the hairs mostly yellowish; stem terete, the internodes about 3 or 4 cm. long; stipules of the stem-leaves 15–20 mm. long, 1.5 mm. broad at the base, from which they taper regularly to an acute point, 3- or 5-ribbed; petioles 6 mm. long, very stout; blades 8–13 cm. long, 2.5–5 cm. broad, regularly ovate with rounded base, acute apex and serrate margin, the teeth numerous, small, slightly irregular; thickish, pilose below, somewhat strigose above; stipules and leaves of the branches similar, but regularly smaller and slightly narrower; flowers solitary in the axils of leaves or bracts of short branchlets, the pedicels one-half the length of the calyx or more; bracteoles none; calyx 8–10 mm. long, strongly angled, cleft more than half way to the base, the lobes broadly triangular with acuminate and acute apex; petals light purple, about the length of the calyx; style-branches 10, stigmas capitate, rather large; ovary conical-ovoid; ovules pendulous; fruit not seen.

Mapiri, July–Aug., 1892 (1477).

Species near *S. achrantha*. Dedicated to Mr. Edmund Baker, who has contributed much to our knowledge of this difficult order.

SIDA GRACILIPES sp. n.

Stems numerous, erect or ascending from a long stout woody tap-root, very slender, 1.5–4 dm. long, terete, scabrous; stipules narrowly subulate, 5–7 mm. long, herbaceous; petioles 7–10 mm. long, slender; blades 2–4 cm. long, 1–2 cm. broad, ovate, tapering from the cordate base to the obtusish apex, with coarsely serrate margins, 5–7-ribbed, membranaceous, very finely silky hairy both sides, especially above; peduncles mostly exceeding the leaves, 1-flowered or bearing a second flower near the summit, slender; bracteoles none; calyx, in flower, 8 mm. long, strongly angled, cleft to below the middle, long-hirsute on the angles, the lobes acuminate, ciliate, 3–5-nerved; petals light purple, slightly exceeding the calyx; style 5-cleft; ovary spheroidal, strongly 5-lobed upon apex and sides; fruit sharply 10-beaked.

Vic. Cochabamba, 1891 (1146).

This is the same as No. 747, from La Granga, March, 1891, missed in Part 1. of my enumeration.

Wissadula rostrata (Schum. et Thoun.) Hook. Nig. Flor. 229 (*Sida rostrata* Sch. et Th. Beskr. 306). Mapiri, July–Aug., 1892 (1512).

Wissadula periplocaefolia (L.) Griseb. Cat. Pl. Cub. 25. Between Guanai and Tipuani, Apr.–June, 1892 (1411) = Rusby's 1860 and 1861.

Wissadula spicata (H. B. K.) Presl, Rel. Haenk. 2: 117. Between Guanai and Tipuani, Apr.–June, 1892 (1416) = Rusby's 1862 and 1957.

Abutilon ramiflorum A. St. Hil. Fl. Bras. Mer. 1: 199. Between Guanai and Tipuani, Apr.–June, 1892 (1451).

Pavonia paniculata Cav. Diss. 3: 135. *pl. 46. f. 2.* Mapiri, July, 1892 (1496) = Rusby's 1789.

Pavonia malacophylla (Nees et Mart.) Britton, Bull. Torr. Bot. Club, 16: 154. Between Guanai and Tipuani, Apr.–June, 1892 (1456) = Rusby's 1462.

Pavonia diuretica St. Hil. Plant. Us. *pl. 53.* A little below Cochabamba, 1891 (1053) = Rusby's 1459.

Gossypium maritimum polycarpum Todaro, Rel. Cult. Cot. *pl. 8.* Espirito Santo, 1891 (1201) = Rusby's 659.

Chorisia sp. Espirito Santo, 1891 (1175). Flowers only.

Ceiba Boliviensis Britten sp. n. Journ. Bot. Apr., 1896. Vic. Cochabamba, 1891 (1154).

Ochroma Lagopus Swz. Fl. Ind. Occ. 2: 1144. Mapiri, July–Aug., 1892 (1501) = Rusby's 1927.

STERCULIACEAE.

Helicteres Barnensis Jacq. Amer. 236. *pl. 147.* Between Guanai and Tipuani, Apr.–June, 1892. (1362 and 1401.) The same form collected by Pearce in Scarlet Valley, below Coroico.

Waltheria Americana L. Sp. Pl. 673. Between Guanai and Tipuani, Apr.–June, 1892 (1418) = Rusby's 1405 and 1458.

Chaetaea lanceolata (Sesse).

Buettneria lanceolata Sesse; DC. Prod. 1: 487. Between Guanai and Tipuani, Apr.–June, 1892 (1369).

TILIACEAE.

Triumfetta semitriloba L. Mant. 1: 173. Vic. Guanai, July, 1892 (1597) = Rusby's 715, 718, 1236a and 1450.

Triumfetta grandiflora Vahl, Ecl. 2: 34. Mapiri, July–Aug., 1892 (1499).

Heliocarpus Americanus L. Sp. Pl. 448. Between Guanai and Tipuani, Apr.–June, 1892 (1455) = Rusby's 1492 and 1493.

Heliocarpus Popayannensis H. B. K. Nov. Gen. 5: 341. Mapiri, July–Aug., 1892 (1491).

LUEHEA SPLENDENS sp. n.

Branches and branchlets very stout, the latter 3 mm. or more in diameter, ferruginous-tomentellate; stipules 2 cm. long, 8 mm. broad, inequilaterally ovate from the base, obtusish, coriaceous, velvety, many-nerved or costate; petioles very stout, about 2 cm. long; blades 1–3 dm. long, 5–15 cm. broad, ovate to obovate with inequilateral cordate base, short-acuminate and acute apex, and sharply serrate-dentate margin, the sinuses rounded; coriaceous, above dark green and very minutely cinereous, the midrib and 8 or 10 pairs of primaries slightly prominent, the former slightly channelled, underneath densely ferruginous-tomentellate, the veins very prominent, the secondaries connecting the primaries and rather crooked; flowers racemose-paniculate at the summit and solitary in the upper axils, rather few; pedicels 1–2 cm. long, 5 mm. broad, terete or subquadrilateral; bracteoles 5 (dividing when older?), valvate, two-thirds the length of the sepals and as long as the petals, acute, coriaceous, densely ferruginous-tomentose without and pinkish-velvety within; sepals 5, valvate, 6 cm. long, lanceolate, coriaceous, densely ferruginous-tomentose without, within crimson, 7–9-nerved, glabrous except the midrib and margins, which are silky-pilose toward the base; petals imbricate, crimson, membranaceous, strongly nerved, obovate, short-acuminate and very acute, entire, the base somewhat narrowed, each bearing about 5 partly coherent, thick glands nearly 5 mm. in length, at the base on the inner side; stamens very numerous, equalling the sepals, the outer somewhat shorter and anantherous, collected in 5 phalanges, white-villous or pubescent at the base; ovary oblong-ovoid, 5-angled, 2 cm. long, ferruginous; style very stout, equalling the sepals, thickened at the apex; stigma capitate, 8 mm. broad; fruit oblong, inequilateral and slightly falcate, strongly 5-lobed (dehiscence?), apparently not mature; seeds strongly imbricate, the oblong apical wing 4 or 5 times as long as the angular body.

Between Guanai and Tipuani, April–June, 1892 (1339).

Collected also by Pearce below Coroico. Fendler's no. 1915, from Trinidad, lacks the cordate leaf-base and has a shorter fruit.

Apeiba Tibourba Aubl. Pl. Guian. 1: 538. Between Tipuani and Guanai, Dec., 1892 (1701) = Rusby's 613 and Gardner's 1476x.

Apeiba membranacea Spruce; Benth. Journ. Linn. Soc. 5: Supp. 61. Between Tipuani and Guanai, Dec., 1892 (1703) = Rusby's 612.

Prockia completa Hook. Ic. Pl. 1: *pl. 94.* Guanai, Dec., 1892 (1633) = Rusby's 1491.

Vallea stipularis Mutis; L. f. Supp. 266. Near snow-line, Mt. Tunari, 1891 (1112).

LINEAE.

ERYTHROXYLON PAUCIFLORUM sp. n.

Glabrous; branches slender, gray-brown; stipules 5–7 mm. long, triangular-subulate, very acute, membranaceous, brown; petioles 3 mm. long, stout; blades 6–12 cm. long, 3–7 cm. broad, regularly oval, obtuse, entire, thickish, veins obscure above, the midrib and 12–15 irregular pairs of primaries slightly prominent beneath; flowers not seen; fruiting pedicels sheathed at the base by 5–7 bracts similar to the stipules, but shorter, the pedicels 5–8 mm. long, upwardly thickened, strongly and sharply angled; calyx 3–4 mm. broad, the sepals very broadly obovate, strongly apiculate, striate; fruit blackish, oblong, 7–8 mm. long, 4 mm. broad, tipped with the persistent styles.

Between Tipuani and Guanai, Dec., 1892 (1639).

MALPIGHIACEAE.

BYRSONIMA BIACUMINATA sp. n.

Arborescent, the branchlets slender, striate, the younger channelled and ferruginous; stipules entire, thickish, broadly ovate, obtuse, concave, gray-tomentose without, bright brown within, about 2 mm. long and broad; leaves attenuate into a short petiole, 6–12 cm. long, 1.5–3 cm. broad, oblong, about equally acuminate at both ends, obtusish or barely acute, thick reticulate and shining above, beneath compactly ferruginous-tomentose; racemes rather dense, ovoid-oblong, 3 cm. long by 2 cm. broad, on peduncles 1.5–2 cm. long; bracts small, ovate, like the peduncles, etc., ferruginous; pedicels about 8 mm. long, grooved, recurved; bud broadly ovoid with rounded apex; petals 6 mm. long; glands white and shining; anthers 2 mm. long, brown; fruit not seen.

Tipuani, Dec., 1892 (1643). Also collected by Pearce at Yungas. Species near *B. spicata.*

STIGMATOPHYLLON COLORATUM sp. n.

Stems strongly twining, slender, slightly channeled, pubescent, some of the hairs retrorse; leaves of the pair nearly equal; petioles 2.5–8 cm. long, rather stout, pubescent, the blackish broadly spheroidal closely sessile glands near the summit; blade 5–15 cm. long, 4–12 cm. broad, regularly cordate-ovate, with nearly closed sinus, with very abrupt slight acute apical prolongation, and obscurely denticulate margin, the veins with short aristiform prolongations; glabrous both sides, bright green above, rich purple underneath, except for the green margins; primaries about 8 pairs, slender, rather crooked, prominent underneath, connected by the secondaries and forked-reticulate near the margin; peduncles axillary, 4–8 cm. long, slender, pubescent, 2–4-angled, compressed at the summit, about 20-flowered, bearing among the pedicels several glands like those of the petioles; pedicels very unequal, many times shorter than the peduncles; bud obovoid, with a broad summit; calyx hemispherical, 5 mm. broad, the sepals broadly ovate with rounded summit, the blackish glands oblong, appressed, two-thirds the length of the calyx, petals 12–15 mm. long; stigmatic appendage conspicuous, green, puberulent; samaras (in my specimen) 1–3, 2.5–3.5 cm. long, about 13 mm. broad at the base, the wing abruptly contracted at the back, near the base, to 1 cm., the apex blunt or rounded, the ventral margin irregularly sinuate above, the surface sparsely gray-pilose, finely very many nerved.

Between Guanai and Tipuani, Apr.–June, 1892 (1366).

Bannisteria sp., near *B. argentea* (H. B. K.) Spreng., but in bud only. Between Guanai and Tipuani, Apr.–June, 1892 (1365).

Bannisteria, apparently an undescribed species intermediate between *B. Martiana* and *B. lucida*, but fruit is lacking.

Mapiri, July–Aug., 1892 (1531).

Tetrapterys papyracea Tr. & Pl. Ann. Sci. Nat. (IV) 18: 334. Between Guanai and Tipuani, Apr.–June, 1892 (1356).=Rusby's 513 but not 731.

Tetrapterys calophylla A. Juss. Monog. Malpigh. 271. Var. (?) BOLIVIANA. n. var.

The younger portions puberulent or canescent; branchlets reddish, stout, the internodes 5–7 cm. long; petioles 1–1.5 cm. long, stout; blades 1–1.5 dm. long, 5–8 cm. broad, oval-obovate, the base subcordate and mostly inequilateral, the apex with a very short blunt point, revolute, thin but rigid, somewhat shining on both sides, sparsely pubescent on the veins beneath, the primaries 5 or 6 pairs, strongly falcate-ascending, connected by the numerous slender crooked secondaries, the reticulation elongated and rather coarse; panicles axillary and terminal, sessile or short-pe-

duncled, leafy, the floral leaves mostly more than 1 cm. long, oval-orbicular, wavy, emarginate, sessile; pedicels 3–5 mm. long, 2-bracted, a gland between the bracts on one side; calyx cup-shaped, 7 or 8 mm. broad, the sepals white, fleshy, entire, broadly oval with rounded apex, strongly appressed to the stamens and two-thirds of their length; glands 8, large, oblong; petals 7 mm. long, strongly clawed and concave, entire; stamens 10, anthers uniform, the filaments a little more than 3 mm. long, the alternate longer, lanceolate, outwardly arched above the base, connivent above and the apices again curved outward; anthers 1 mm. long, not appendaged; ovary densely pilose, the gynobase very slightly pyramidal-elevated; ovaries 3, the cristae low, obtuse; styles stout, a little exceeding the stamens; stigmas oval, oblique, green, 1 mm. long; fruit not seen.

Between Guanai and Tipuani, April–June, 1892 (1338).

Apparently the same as Rusby's, No. 731, but not 513.

Hiraea chlorocarpa A. Juss. Ann. Sci. Nat. (II) 13: 259. Espirito Santo, 1891 (1192).

ZYGOPHYLLEAE.

PORLIERA ARIDA sp. n.

Fructicose, divaricately much branched, the branchlets short and stout, some of them spinose, blackish, the youngest tomentellate and grayish; spines (stipules) of variable length, about 1 mm. long, stout, rigid, pungent, spreading; leaves papillose-glandular, light green, about 1 cm. long on a very short petiole, rhachis stoutish, the leaflets about 9 pairs, sessile, 2 to 3 mm. long by 0.6 mm. broad, oblong or slightly broader near the rounded apex, thick and coriaceous; flowers not seen; fruiting peduncle 5 to 7 mm. long, clavate; fruit obcordate, 2-celled (always?), 5 mm. long by 8 mm. broad, blackish.

Turedon, 1891 (1124).

Very near *P. hygrometrica* R. and P., but differs in form of leaflets and of fruit. Mandon's no. 861 with about 15 pairs of narrower leaflets, 7 mm. in length, shining above, and with fruit almost identical with *P. arida*, is quite distinct and is apparently undescribed.

GERANIACEAE.

Tropaeolum tuberosum R. and P. Fl. Per. 3: *pl. 314.* Vic. Cochabamba, 1891 (Cult.) (1102)=789.

TROPAEOLUM MACULATUM sp. n.

Glabrous; stems very slender, the internodes about 5 cm. long; petioles slender, nearly 1 dm. in length; stipules none; leaves

3–8 cm. broad, 2–5 cm. long, the basal margin sub-truncate, the remainder divided one-third of the way to the petiole into five lobes which are roundish-quadrilateral and obscurely sinuate, separated by narrowly ovate obtuse or rounded sinuses, veins 7 to 9, slender; pedicels solitary, in flower about 8 cm. long; flower about 2 cm. long, yellow or light scarlet with large deep indigo spot and a light scarlet stout spur 1 cm. long.

Vic. Cochabamba, 1891 (1066).

Hypseocharis pimpinellifolia Remy, Ann. Sci. Nat. (III.) 8: 238. Near snow-line, Mt. Tunari, 1891 (1043) = Rusby's 2553.

Oxalis tuberosa Mol. Stor. Nat. Chil. 132. Turedon, 1891. Cult. as "Oca." (1104).

Oxalis filiformis H.B.K. Nov. Gen. 5: 245. *pl. 469.* Near snow-line, Mt. Tunari, 1891 (1037) = Mandon's 847.

Oxalis dendroides H. B. K. Nov. Gen. 5: 250. Between Guanai and Tipuani, Apr.–June, 1892 (1397) = Rusby's 856 and 1752.

OXALIS ERYTHROPODA sp. n.

Stems erect or ascending, straight, stout, simple, red or purple at least at the base, puberulent; internodes very unequal, mostly 1–2 cm. long; petioles 2.5–3.5 cm. long, slender, strongly ascending, pubescent; leaflets 3, the lateral petiolules 1 or 2 mm., the terminal 4 or 5 mm. long; leaflets 2–3 cm. long, 1–2 cm. broad, the lateral oval or slightly obovate, with rotund apex and subrotund base, the terminal obovate with cuneate base and subtruncate slightly retuse apex, all very thin, densely sericeo-pubescent and pale underneath, less sericeous above; peduncles solitary in the axils, 5–7 cm. long, otherwise similar to the petioles, the (about 10) flowers umbelled or capitate at the summit; pedicels mostly present, at most 3 or 4 mm. long; flowers bright yellow, about 8 mm. long; calyx one-half as long as the corolla, the sepals ovate, tapering, acute; capsule nearly or quite 1 cm. long, two-thirds as broad, turgid, ovoid, with truncate broad base and broad apex, tipped by the purple styles 1 mm. long, and enclosed for two-thirds of its length by the accrescent calyx; seed 2.5 mm. long, oval-ovoid, short-beaked, light brown, coarsely reddish muricate.

Vic. Guanai, July, 1892 (1598). Near *O. Sepium*.

RUTACEAE.

Erythrochiton Brasiliense Nees et Mart. Nov. Act. Cur. 11: 166. Between Guanai and Tipuani, Apr.–June, 1892 (1367)=Rusby's 2615.

Citrus acida Roxb. Fl. Ind. 3: 390. Vic. Guanai (naturalized) 1892 (1611).

Benjamina Peruviana (Planch.) Kuntze, Rev. Gen. Pl. 103. (*Dictyoloma Peruviana* Planch. in Hook. Lond. Jour. Bot. 5: 583). Between Guanai and Tipuani, Apr.–June, 1892 (1385) = Rusby's 738 and Spruce's 3888.

OCHNACEAE.

CESPEDESIA EXCELSA sp. n.

Glabrous, arborescent, the branchlets stout, terete; stipules 6–8 cm. long, 1 cm. broad, oblong-spatulate with rounded apex, the margin above slightly crumpled-crenate; petioles .75–1 dm. long, 8 mm. broad, semi-cylindrical, the upper side hollow with very acute edges; blades 5–7.5 dm. long, 2–2.5 dm. broad, obovate-spatulate with regularly rounded apex, sinuate-serrate, the very small teeth strongly inflexed, scarcely mucronate; coriaceous, rigid, the primaries 35 to 45 pairs, parallel, straight, connected by very numerous straight secondaries which meet at about the middle point; panicle 2.5–3 dm. long, exclusive of the stout peduncle, which is two-thirds as long, sparsely branched, and few-flowered; pedicels 1 cm. long, stout; calyx saucer-shaped, about 7 mm. broad, mostly lobed to about the middle, the lobes broad and rounded, the tube lightly costate; bud 1.25–1.5 cm. long, slightly and obtusely pointed; petals deep yellow, broadly obovate with rounded crumpled margin, thick; stamens shorter than the corolla, pistil a little longer, the ovary slightly falcate; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1723). Distributed as 1658 or 1658a.

MELIACEAE.

GUAREA RUSBYI (Britton). (*Sycocarpus Rusbyi* Britton, Bull. Torr. Bot. Club, 14: 143).

Since referred to *G. trichilioides* L., but the latter species is really a West Indian shrub. Specimens of *Guarea* in herbaria are very badly named, and the limits of the species are difficult to trace. This species is nearest to *G. Aubletii*, but differs especially in the denseness and stoutness of the more compound inflorescence, the shorter and broader bud, and the deeper thicker more wooly, erect calyx, which closely clasps the base of the corolla. It appears intermediate between *G. Aubletii* and *G. purgans*.

Between Guanai and Tipuani, Apr.–June, 1892 (1373) = Rusby's 463 and 1296.

MOSCHOXYLON PACHYPODUM sp. n.

Flowering branchlets very thick, tomentose; petioles 4 or 5

cm. long, a little shorter than the internodes of the rhachis; leaflets about 9, the upper, except perhaps the terminal, successively larger, imperfectly opposite, on stout petiolules 3 or 4 mm. in length, .5–1.5 dm. long, 3–7 cm. broad, oblanceolate, with rounded or blunt base and abruptly short-pointed and obtuse apex, entire, revolute, coriaceous, glabrous above with pubescent midrib and slightly impressed primaries (16 to 20 pairs), underneath downy on the veins; panicles terminal, irregularly much branched, short and broad; buds globose-ovoid, obtuse, 2.5–3 mm. long; calyx nearly plane, 2.5–3 mm. broad, divided midway; petals purplish-red, 3.5 mm. long; fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1454).

MOSCHOXYLON VIRIDE sp. n.

Branches stoutish, grayish-red, terete; petioles (the upper) 3–5 cm. long, the internodes of the rhachis a little shorter; leaflets 7, the upper successively larger, 6–12 cm. long, 3–5 cm. broad, obovate, the cuneate base tapering into a very short petiole, and, especially the uppermost, inserted into a dilated portion of the rhachis, the apex abruptly contracted into a short broad obtuse point; entire, membranaceous, bright green, glabrous on both sides, venation slender, the primaries about 10 or 12 pairs; panicles solitary in the axils and terminal, about 1 dm. long exclusive of the long or short peduncle, pyramidal, lax; flowers not seen; fruiting pedicels 3–5 mm. long and like the branches of the panicle, slightly cinereous; calyx plane, 3 mm. broad, lobed to the middle; fruit (mature?) ellipsoidal, 8 or 9 mm. long, 6 mm. broad, tomentose, yellowish, bluntly triangular, the sides lightly grooved, imperfectly 3-celled through the abortion of all but one ovule.

Between Guanai and Tipuani, Apr.–June, 1892 (1370).

Possibly a *Trichilia*, though the habit is that of *Moschoxylon*. It is apparently near *M. gracile*.

OLACINEAE.

HEISTERIA BIFLORA sp. n.

Glabrous; branches slender, strongly ascending, slightly angled, the internodes 2.5–3 cm. long; petioles half as long as the internodes; blades .7–1 dm. long, 3–4 cm. broad, oblong, the base cuneate, the apex abruptly short- and blunt-pointed; dark green, coriaceous but not thick, the venation indistinct, strongly reticulate, the primaries about 15 pairs, communicating very near the margin; pedicels geminate, 4 mm. long; flowering calyx saucer-shaped, 2.5 mm. broad, divided half-way to the base, the lobes triangular, acute; petals 3 mm. long, ovate-oval, acutish;

stamens 10, shorter than the petals, the alternate ones longer, the filaments flattened, pilose; ovary broad, 5-lobed; style stout, conical-cylindraceous; fruiting calyx 1.5–2 cm. broad; fruit 1 cm. long, spheroidal, light-brown, coarsely many-striate.

Between Guanai and Tipuani, Apr.–June, 1892 (1407).

Heisteria—species probably undescribed, but farther comparison is required. Between Tipuani and Guanai, Dec., 1892 (1677).

Schoepfia obliquifolia Turcz. Bull. Soc. Imp. Nat. Mosc. 31: Part 1, (1858) 249. Guanai–Tipuani, Apr.–June, 1892 (1409).

DENDROBANGIA gen. nov.

Flowers perfect; calyx 5-parted, the segments coherent at the base, imbricated, unequal, the outer larger; petals 5, coriaceous, valvate, the apices inflexed and bearing bearded appendages, which in the bud are entangled with the anthers, in anthesis strongly recurved; stamens 5 and alternate, or 10, the filaments naked, dilated at the base, adnate to the corolla-tube, the anthers short, 2-celled, cells connected only at the point of attachment to the filament, not appendaged; disk none or inconspicuous; ovary compressed, inequilateral, 1-or (mostly) 2-ovuled, the ovules pendulous; stigma minute, nearly sessile, situated unilaterally; fruit not seen.

A tree, with alternate exstipulate coriaceous leaves, and nodal and intranodal inflorescence, the flowers sessile and crowded at the ends of the short branchlets of the small clustered panicles; bracts and bracteoles present.

Although in its calyx-characters this genus is related to *Villaresia*, its corolla is in all its general features like that of *Poraqueiba* or *Emmotum*.

I am indebted to Mr. Oliver for having kindly pointed out the affinities of the plant.

DENDROBANGIA BOLIVIANA sp. n.

Branchlets stoutish, terete, glabrate, the internodes 1–1.5 cm. long; petioles .5–1 cm. long, very stout; blades .75–1.5 dm. long, 4–5 cm. broad, obovate, the base obtuse, the apex abruptly short-pointed, acutish; entire, rigid, dark green, glabrous, venation inconspicuous, the primaries about 6 pairs, strongly falcate-ascending, somewhat crooked; panicles 2 or 3 cm. long, loose, granular-scurfy, the bracts ovate, 2 mm. long, thick and rigid, gray, the bracteoles similar, closely appressed to the calyx; calyx thick and coriaceous, the sepals lightly imbricated, nearly 2 mm. long, ovate, the margins lighter colored; corolla dark purple, 3 mm. long, broadly campanulate, lobed two-thirds of the way to the base, the ovate acute lobes strongly recurved, the appendages oblanceolate,

densely bearded; stamens about half as long as the corolla-lobes, exclusive of their appendages.

Between Tipuani and Guanai, Dec., 1892 (1694).

ILICINEAE.

ILEX AMPLIFOLIA sp. n.

Glabrous; branches stout, much wrinkled in drying, light gray-brown; petioles very broad and stout, 1–1.5 cm. long; blades .75–1.5 dm. long, 4–8 cm. broad, oval-elliptical or the base slightly produced, the margin obsoletely serrate, and slightly revolute, coriaceous and very thick, dark-green or the older pale; on the upper surface midrib broad, slightly prominent, longitudinally wrinkled, veins inconspicuous; underneath the very stout midrib and 10–12 non-opposite primaries very prominent, the latter forked and anastomosing near the margin; bracts light brown, 3–4 mm. long, broadly ovate, acuminate and acute, sheathing the base of the peduncle, the bractlets similar but smaller; peduncles proceeding irregularly from the upper internodes, about 2 cm. long, slender, blackish, bearing 3–5 umbels on secondary peduncles less than half as long; umbels about 5–10-flowered, occasionally compound, the pedicels 3–4 mm. long; buds globose, about 3 mm. in diameter, rather loosely seated in the calyx, which is crateriform and very slightly lobed, the lobes broad and rounded; petals 3–3.5 mm. long and broad, white, thickish; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1682).

Very near *I. crassifolia* and perhaps the same as Lechler's no. 2624.

CELASTRINEAE.

MAYTENUS FLAGELLATA sp. n.

Glabrous, much branched, the branches and branchlets elongated and very slender, the former gray-brown, the latter green and sharply angled or narrowly winged, very leafy, the internodes about half the length of their leaves; leaves subsessile, 1.5–3 cm. long, 2–4 mm. broad, oblong-oblanceolate with tapering base and acutish or abruptly pointed apex, faintly serrate with brownish cartilaginous teeth, thick and rigid, pale green, the midrib and about 6 pairs of ascending primaries rather prominent on both sides; flowers sessile, mostly geminate, greenish-yellow with purple center, 4 mm. in diameter; fruit globose-pyriform, 7–8 mm. long, light brown, 2-carpelled.

Turedon, 1891 (1128).

RHAMNEAE.

Gouania Blanchetiana Miq. Linnaea, 22: (1849) 797. (*G. sepiaria* Mart. ex Britt. Bull. Torr. Bot. Club, 16: 189.) Espirito Santo, 1891 (1187). = Rusby's 1486.

Gouania tomentosa Jacq. Amer. 263. Espirito Santo, 1891 (1270) = Rusby's 1758.

AMPELIDEAE.

Vitis sicyoides canescens (Lam.) Baker, in Mart. Fl. Bras. 14: Part 2, 202. Espirito Santo, 1892 (1265) = 321.

Vitis ovata (Lam.) Baker, in Mart. Fl. Bras. 14: Part 2, 203. Between Guanai and Tipuani, Apr.–June, 1892 (1389) = Rusby's 2087.

SAPINDACEAE.

Determined by Dr. L. Radlkofer.

Serjania sufferruginea Radlk. Mon. Sap. 299. Espirito Santo, 1891 (1258).

Serjania leptocarpa Radlk. Mon. Sap. 112. Espirito Santo, 1891 (1262).

Serjania meridionalis Camb. in St. Hil. Fl. Bras. 1: 366. *pl. 76.* Espirito Santo, 1891 (1266a).

Serjania marginata Casar. Decad. Stirp. Nov. Bras. 5: 44. Vic. Mapiri, 12,000 ft., Sept , 1892 (1587). Ad forma *S. pluridentata* Radlk., foliis depauperatis = Rusby's 525.

Serjania Mansiana Mart. Flora 23: (1839) in Bibliog. 1, 9. Vic. Mapiri, 8,000 ft., Sept., 1892 (1583).

Serjania confertiflora Radlk. Serj. Monogr. 117; Suppl. 89, 162; Fl. Bras. fasc. 113, 262) Var. DASYCEPHALA Radlk. Fructus (juvenilis) truncatus, puberulus, loculis subcristatis dense rufidulo-pubescentibus; foliola punctis lineolisque pellucidis nervis lateralibus parallelis undulato-flexuosis eleganter notata. Espirito Santo, 1891 (1262a). Between Guanai and Tipuani, Apr.–June, 1892 (1357, flor.)=Rusby's n. 1754 (flor. et fruct. juvenil.) and Bang's 421a.

Serjania dumicola Radlk. Conspect. Serj. 4. Between Guanai and Tipuani, Apr.–June, 1892 (1450).

Allophylus punctatus (Poepp.) Radlk. (*Schmidelia punctata* Poepp. Nov. Gen. 3: 38. *pl. 244*). Mapiri, July–Aug., 1892 (1520).

Allophylus petiolulatus Radlk. Erganzungen Mon. Sap. 181. Between Tipuani and Guanai, Dec., 1892 (1638). = Rusby's 2086.

ANACARDIACEAE.

Quebrachia Lorentzii Griseb. Symb. Bot. Fl. Arg. 95? Turedon, 1891 (1129). Presents differences in foliage and size of flowers from the type, but fruit is lacking.

TAPIRIRA PEARCEI sp. n.

Branches stout, brown, hoary, striate; petioles 6–10 cm. long, stout, striate, glabrate, the internodes of the rhachis about half as long; leaflets 7–9, the upper larger; the petiolules .5–1 cm. long, stout; leaflets .8–1.5 dm. long, 3–5 cm. broad, narrowly ovate, with subrotund but highly unequal base and acuminate apex, coriaceous, dark-green above, ferruginous but glabrous underneath, midrib prominent both sides, strongly so below, like the 10 to 15 pairs of primaries; panicles fascicled at the summit, 2–3 dm. long, decompound, lax, open and sparsely flowered; bracts subulate, twice the length of the pedicels; flowers very shortly and stoutly pedicelled; calyx 2 mm. broad, deeply lobed; petals twice the length of the calyx, white, oblong-obovate; fruit not seen, except as stated below.

Vic. Mapiri, July–Aug., 1892 (1543). Collected also by Pearce at Sandillani and Chailla. His specimens show fruit blackish, broadly ovoid, obliquely truncate, granular, 11 mm. long, 6 mm. broad.

LEGUMINOSÆ.

Crotalaria Pohliana Benth. Tayl. Ann. Nat. Hist. 3: 428. Between Guanai and Tipuani, Apr.–June, 1892 (1442)=Rusby's 580.

Indigofera Anil L. Mant. 272. Guanai, Apr.–June, 1892 (1460).

Barbiera polyphylla DC. Mem. Leg. 242. Between Guanai and Tipuani, Apr.–June, 1892 (1363) = Rusby's 2356.

GLIRICIDIA MICHELII sp. n.

Apparently a climbing or reclining shrub, the younger growth puberulent; branches much elongated and slender, coarsely angled, glabrous, the internodes unequal, mostly about 8 cm. long; stipules lanceolate or subulate, 3 mm. long; petioles 1–1.5 cm. long, angled, internodes of the rhachis nearly 1 cm. long, stipellae none; leaflets about 7 or 8 pairs, on very short petiolules, 1.5–3 cm. long, .8–1.5 cm. broad, slightly inequilateral, oblong-ovate, the base rounded, the apex blunt and minutely cuspidate, entire; lightly revolute, membranaceous, bright-green, minutely black-dotted un-

derneath, finely reticulate, the primaries about 8 on each side, not opposite, crooked; racemes axillary, in reality solitary but appearing as though 2–3-fascicled, 8–10 cm. long inclusive of the peduncle, which is 1–2 cm. long, interrupted, the flowers mostly 2 or 4 together, the bracts similar to the stipules; calyx broadly campanulate, 4 mm. long and broad, divided about one-third of the way to the base; corolla purple, exceeding the calyx by 5 or 6 mm.; vexillum indistinctly auricled; style naked; youngest legumes only seen, apparently coriaceous, about 5-seeded.

Vic. Sorata, Nov., 1892 (1621). Kindly determined by M. Micheli.

Astragalus Mandoni Rusby, Mem. Torr. Bot. Club, 3: Part 3, 19. Near snow-line, Mt. Tunari, 1891 (1022).

Chaetocalyx Brasiliense (Vogel) Benth. in Mart. Fl. Bras. 15: Part 1, 75. Between Guanai and Tipuani, Apr.–June, 1892 (1348) = Rusby's 2398.

AMICIA PARVULA sp. n.

Herbaceous, the stems much elongated, very slender, only the younger portions minutely puberulent, purplish below, terete, the internodes 3 or 4 cm. long; stipules withering-persistent, broadly sheathing, somewhat decurrent, about 5 mm. long; petioles filiform, 1–2.5 cm. long; leaflets 2 pairs, subsessile, about 1 cm. long and broad, triangular, obcordate, the lobes entire, rounded, the large sinus (about 90°) varying from acute to rounded, very sparsely pubescent and rather sparsely beset below with rather large brown glands; racemes solitary in the axils and terminal-panicled, the peduncles 1–2 cm. long, filiform but rigid, erect-spreading, the flowers about .75–1 cm. apart, their bracts 2 mm. long, 1 mm. broad, obovate with rounded apex, herbaceous, the pedicels 5–7 mm. long, filiform; calyx about 8 mm. long, strongly nerved, pubescent, sparsely beset with large bright red glands, the tube 2 mm. long, campanulate, the upper lobes 5 or 6 mm. long, 2 mm. broad, obovate with short-acuminate and obtuse point, the lateral lobes 3 mm. long, oblong, obtuse, the lower lobe nearly equalling the upper, broader, folded to form a keel; petals subequal; vexillum 8 mm. long, 6 mm. broad, obovate, scarcely emarginate; alae 8 mm. long, slightly oblique, obtuse, free, auricled; stamens 9 mm. long, monadelphous, the sheath cleft upon the upper side, the anthers uniform; style slightly exceeding the stamens, the apex recurved, the stigma ovoid, oblique; ovary sessile, 3 mm. long, 4- or 5-ovuled; fruit about 1 cm. long, 3 mm. broad, 4- or 5-seeded, both sutures intruded, the lower more deeply; segments circulo-quadrilateral, the margin thickened and wavy or tuberculate, 2-winged upon the inferior side along the

middle portion, thickened, crenate; pericarp cartilaginous, thickened; seed 2 mm. long, strongly reniform, moderately flattened, smooth.

Vic. Cochabamba, 1891 (1068). It is possible that when the fruit and seed characters of *Amicia* are better known, it will be found that this is generically distinct.

PATAGONIUM GRANDIDENTATUM sp. n.

Hoary-pubescent; root vertical, stout; stems numerous from a perennial crown, ascending, elongated, slender, sparingly branched, the branches similar; stipules 2–3 mm. long, two-thirds as broad, inequilateral, ovate, acute or acuminate; leaves conspicuously but unequally petioled, bearing mostly about 10 leaflets on each side, these unequally distributed but approximately about the length of their internodes; leaflets subsessile, 5–7 mm. long, 3–5 mm. broad, obovate, or the larger inclining to truncate and triangular-obovate, about 8-toothed, the teeth large and rounded with acute sinuses, thick, the venation obscure and impressed above; racemes terminal, the lowest flowers in the axils of small leaves; bracts similar to the stipules; pedicels about as long as the flowers, 5 mm. or in fruit about a half longer; legume (exclusive of pedicel and beak) about 2 cm. long, 3.5 mm. broad, tipped with a subulate or filiform beak of variable length, of about 7 joints, beset with small dark green glands; sinuses of the articulations extending less than half way across; seed rich brown, lenticular, one-half to two-thirds as broad as the legume.

Vic. Cochabamba, 1891 (1012).

Stylosanthes Guyanensis subviscosa Benth. in Mart. Fl. Bras, 15: Part 1, 192. Between Guanai and Tipuani, Apr.–June, 1892 (1459). Determined by Dr. P. Taubert.

Meibomia cajanaefolia (DC.) Kuntze, Rev. Gen. Pl. 195. Guanai, Apr.–June, 1892 (1417) = Rusby's 964.

Lathyrus pubescens H. and A. Bot. Beech. 21. Near snow-line, Mt. Tunari, 1891 (1023) = Rusby's 1011.

Bradburia Plumiera (Turp.) Kuntze, Rev. Gen. Pl. 164. (*Centrosema Plumiera* Turp. Ann. Mus. Vind. 2: 110.) Espirito Santo, 1891 (1273).

Erythrina rubinervia H. B. K. Nov. Gen. 6: 434. Mapiri, July–Aug., 1892 (1515).

Styzolobium rostratum (Benth.) Kuntze, Rev. Gen. Pl. 208 (*Mucuna rostrata* Benth. in Mart. Fl. Bras. 15: Part 1, 171.) Vic. Guanai, July, 1892 (1599.)

No. 1257 is also apparently a form of the same species.

Stizolobium ellipticum Pers. Syn. 2: 299. Between Guanai and Tipuani, Apr.–June, 1892 (1353).

Stizolobium Mapirense sp. n.

Sparingly ferruginous-pubescent throughout, except the gray-tomentose calyx; stems very slender, the internodes 3–5 dm. long or more; petioles 5–7 cm., rhachis 1.5–2 cm., and petiolules 1 cm. long, the last thickened, blackish; lateral leaflets 1–1.5 dm. long, 6–8 cm. broad, the lower lateral half about twice the breadth of the upper, ovate, the base rounded or inclined to cordate, the apex abruptly and very slenderly acuminate; entire, very thin, dark, sparingly strigose; terminal leaflet nearly a half longer, very little broader, obovate-oval, the base slightly contracted, otherwise similar; venation reticulate, inconspicuous, very slender, yellowish; peduncles very slender, nearly a meter long, thickened toward the panicle; pedicels flattened, 2–4 cm. long; bud ellipsoidal; calyx campanulate, 2 cm. long and nearly 3 cm. broad at the oblique mouth, the teeth short and broad, the longest 1 cm. long; vexillum 3 cm., the other petals 4 cm. longer than the calyx, the keel barely exceeding the wings, not beaked, obtuse or scarcely acute, with a yellowish apex, the apices of keel and standard separated by 3–3.5 cm.; fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1413).

Calopogonium galactioides Benth. ex. Hemsl. Biol. Cent. Am. 1: 301. Espirito Santo, 1891 (1276) = Fendler's 274.

Calopogonium coeruleum (Benth.) Britt. Bull. Torr. Bot. Club, 16: 262. Between Guanai and Tipuani, Apr.–June, 1892 (1452).

Dioclea pauciflora sp. n.

Branchlets, petioles, rhachis and pedicels harshly puberulent; petioles .6 to 1 dm. long, the rhachis 2–3 cm. long; petiolules 5–8 mm. long, stout; lateral leaflets .75–1 dm. long, 5–8 cm, broad, oval-ovate, slightly inequilateral, the base rounded, the apex abruptly short-acuminate and obtusish; entire, scarcely revolute, thin and membranaceous, pale, glabrous, primaries 5–7 pairs, not opposite, slightly prominent and slender, the veins finely reticulate; terminal leaflet oval-obovate, otherwise similar; panicles about 3 dm. long, peduncled, very loosely flowered, narrow and raceme-like, the branches 3–5 mm. long, very stout, at length about 10-flowered; pedicels about 3 mm. long, slender, 2-bracted at the summit, the bracts broadly ovate and acuminate, 1.5 mm. long, clasping the calyx; calyx campanulate, 1 cm. long, the lower lobe 4 mm. long; corolla nearly thrice the length of the calyx, the keel not rostrate, light purple; anthers uniform; fruit not seen.

Espirito Santo, 1891 (1190.)

Canavalia ensiformis (L.) DC. Prod. 3: 404. Espirito Santo, 1891 (1272) = Rusby's 1328, 2368 and 2858.

Dolichos Lablab L. Sp. Pl. 725. Espirito Santo, 1891 (1274).

Phaseolus prostratus Benth. in Mart. Fl. Bras. 15: Part 1, 192. A little below Cochabamba (1011).

Pachyrhizus tuberosus (Lam.) Spreng. Syst. 4: Cur. Post. 281. Between Guanai and Tipuani, Apr.–June, 1892 (1430).

Rhynchosia minima (L.) DC. Prod. 2: 385. Between Guanai and Tipuani, Apr.–June, 1892 (1433).

Amerimnon Spruceanum (Benth.) Kuntze, Rev. Gen. Pl. 159 (*Dalbergia Spruceana* Benth. in Mart. Fl. Bras. 15: Part 1, 223.) (?) Between Guanai and Tipuani, Apr.–June, 1892 (1408). M. Micheli, who kindly compared this for me with the specimens at Kew, thought that it did not exist there, but I subsequently found it to agree so closely with one of the two specimens (not the one from Santarem) thus marked by Mr. Bentham, that I think it may be thus referred.

Amerimnon—in fruit only and not determinable. Vic. Mapiri, July–Aug., 1892 (1471).

PLATYMISCIUM COCHABAMBENSE sp. n.

Glabrous; brancnes short and stout, light-gray, verrucose; petioles 2.5 or 3 cm. long, stout, the internodes of the rhachis, except the terminal, about as long, both stipules and stipellae wanting; leaflets 7, the petiolules 3 or 4 mm. long, stout; blades 5–8 cm. long, 3–4 cm. broad, the upper larger, oval, occasionally slightly ovate or obovate, the base rounded, the apex abruptly very short and obtusely pointed; entire, very thick, finely and inconspicuously reticulate-veined, the primaries about 7–9 pairs, alternating with shorter ones; racemes solitary in the axils and several at the summit, sessile or unequally peduncled, 8–10 cm. long, simple, rather densely flowered, the flowers mostly solitary, the pedicels about 2 mm. long, bearing a sheathing semicircular thickened gland near the base of the calyx, both bracts and bractlets wanting; calyx obliquely campanulate, 5 mm. long and broad, thick, the teeth short, triangular-ovate, obtuse; corolla 1 cm. long, the petals subequal, the standard slightly the longest; stamens unequal, slightly shorter than, style slightly exceeding, the petals; stipe stout, about as long as the ovary, fruit not seen.

Espirito Santo, 1891 (1181).

SCLEROLOBIUM RADLKOFERI sp. n.

Lightly ferruginous or blackish-tomentose, except the glabrous

and shining upper leaf-surfaces; branchlets and petioles strongly angular; stipules and stipellae not seen; petioles 3 or 4 cm. long, dilated at the base, the internodes about 2 or 2.5 cm. long; leaflets mostly 15, the petiolules 4 or 5 mm. long, dilated, blackish-tomentose, the blades .5 to nearly 1 dm. long, 3.5–6 cm. broad, the upper larger, oval-ovate, the base slightly cordate and very oblique, the apex very short-pointed; entire, revolute, thick, coriaceous, the midrib and 6–8 pairs of primaries impressed above, very stout and prominent beneath; panicles terminal, mostly about 2 dm. long, open, the peduncle and branches very stout and strongly angled, the latter erect; flowers sub-sessile, about 5 mm. long and broad; calyx, and especially the corolla, gray-tomentose, the filaments and ovary densely bright ferruginous-hirsute; fruit not seen, apparently glabrate.

Between Tipuani and Guanai, Dec., 1892 (1690). Dedicated to Prof. Dr. L. Radlkofer, who kindly determined the genus.

Caesalpinia pulcherrima (L.) Swz Obs. 166. Between Guanai and Tipuani, Apr.–June, 1892 (1386).

Cassia trachypus Mart. Fl. Bras. 15: Part 2, 122. Between Guanai and Tipuani, Apr.–June, 1891 (1345) = Rusby's 986.

Cassia hirsuta L. Sp. Pl. 378. Vic. Guanai, July, 1892 (1605).

Cassia bicapsularis L. Sp. Pl. 376. Espirito Santo, 1891 (1188).

Cassia versicolor Meyen in Vog. Syn. Cass. 29. Espirito Santo, 1891 (1171).

Cassia racemosa Mill. Dict. ed. 8, no. 19. Vic. Guanai, July, 1892 (1610).

Cassia bacillaris L. f. Supp. 231. Mapiri, July–Aug., 1892 (1561) = Rusby's 2400.

Cassia—sp. in flower only, not represented at Kew, but fruit is necessary for identification. Below Cochabamba, 1891 (1090).

Bauhinia inermis (Cav.) Pers. Syn. 1: 455 ? Between Guanai and Tipuani, Apr.–June, 1892 (1342). The legume is rather shorter and broader than in the type.

Tamarindus Indica L. Sp. Pl. 34. Between Tipuani and Guanai, Dec. 1892 (1736).

Copaiba Langsdorffii (Desf.) Kuntze, Rev. Gen. Pl. 172 (*Copaifera Langsdorffii* Desf. Mem. Mus. Par. 7: 377. *pl. 14*)? Vic. Mapiri, July–Aug. 1892 (1508). The fruit appears rather too large and the leaflets too broad, inequilateral and falcate for the species, but the specimen is in fruit only.

Piptadenia communis Benth. in Hook. Lond. Jour. Bot. 4: 337. Guanai, Apr.–June, 1892 (1361) = Rusby's 1307.

Mimosa Soratensis Benth. Trans. Linn. Soc. 30: 427. Vic. Sorata, May, 1892 (1317) = Rusby's 1299.

Mimosa rufescens Benth. in Mart. Fl. Bras. 15: 362. Guanai, Apr.–June, 1892 (1505) = Rusby's 1304.

Mimosa albida Kunth, Mim. *pl. 1.* Guanai, Apr.–June, 1892 (1435) = Rusby's 1297.

Acacia Bonariensis Gill. in Hook. Bot. Misc. 3: (1833) 207. Espirito Santo, 1891 (1168).

Acacia riparia H.B.K. Nov. Gen. 4: 276. Between Tipuani and Guanai, Dec., 1892 (1671).

Acacia Michelii sp. n.

Much and flexuously branched, the branchlets stout, reddish-brown, striate and finely tuberculate, the internodes 1.5–2 cm. long; spines recurved-spreading, 2–4 cm. long, slender, very pungent, bluntly keeled, the older whitish and minutely black-dotted, the younger light-brown; leaves mostly petioled, 5–6-jugate, 3–5 cm. long, 2–3 cm. broad, the pinnae sub-sessile, 15–20-jugate, the leaflets sessile, 4–5 mm. long, .5–1 mm. broad, oblong, with sub-cordate base and rounded apex, pale, thickish, glabrous, the veins very obscure; peduncles solitary, erect, slender, about 2 cm. long; heads globose. Fruit about 5 or 6 cm. long, 1 cm. broad, blunt, moderately flattened, lightly constricted between the 5 or 6 seeds, brown.

Vic. Cochabamba, 1891 (1095). Near *A. constricta.*

Calliandra Boliviana Britton, Bull. Torr. Bot. Club, 16: 327. Guanai, July, 1892 = Rusby's 1314 and 1315.

Calliandra inaequilatera sp. n.

Branchlets slender, light gray-brown, striate, the younger puberulent, the internodes 3–4 cm. long; stipules indurated, 5 mm. long, ovate, abruptly contracted near the middle and tapering above, obtuse or acutish, strongly many-nerved; common petioles 1–1.5 cm. long, stout, puberulent, bearing a single pair of very short-petioled unequal pinnae; stipellae similar to the stipules; leaflets 4–7 pairs, subsessile, 2–4 cm. long, .7–1.4 cm. broad, the upper larger, lance-ovate, inequilateral and falcate, the base rounded or subcordate, the apex obtuse and cuspidulate; entire, revolute, coriaceous, deep green, above glabrous and shining, underneath pubescent on the veins, 2-nerved, strongly reticulate; peduncles solitary in the axils, scarcely half the length of the leaves; heads 4 or 5 cm. in diameter when in full bloom, scarlet or

crimson; calyx 3–4 mm. long, campanulate, strongly many-nerved, the teeth short, triangular-ovate; corolla infundibular, more than twice the length of the calyx, strongly about 25-nerved, the teeth 2 mm. long, ovate, obtuse; stamens many times the length of the corolla; fruit not seen.

Vic. Guanai, 1892 (1586).

In some respects this appears more like a *Pithecolobium*, but its venation marks it a *Calliandra*, in the section *Macrophyllae*.

Pithecolobium sophorocarpum Benth. in B. & H. Gen. Pl. 1: 598.

Var. (?) ANGUSTIFOLIUM var. nov.

The leaflets are 1.5 cm. long by about 3 mm. broad at the clasping cordate inequilateral base, which is conspicuously yellow-tufted, the margin is ciliate, the lower surface pale and very prominently reticulate, the rhachis hirsute. It appears to me to be a distinct species, but flowers are lacking.

Vic. Guanai, 1892 (1606).

PITHECOLOBIUM VENOSUM sp. n.

A large tree, the foliage softly pubescent except the upper leaf-surfaces; branchlets unarmed, stoutish, angular, flexuous, the internodes short and unequal; stipules not apparent; petioles strongly articulated to a prominently enlarged base, longer than the internodes of the rhachis, stout, angled; pinnae about 6 pairs, imperfectly opposite, their petioles swollen at the base, the lowest 2- the uppermost 4-jugate; glands 1 mm. below the insertion of the leaflets, conspicuous, orange-colored to brown; leaflets regularly enlarging upward, 2.5–5 cm. long, 1.5–4 cm. broad, on petioles about as broad as long, inequilateral, rhomboidally oval, subrotund at base and apex, shortly and bluntly cuspidate, entire, slightly revolute, coriaceous, dark-green and glabrous above, pale beneath, finely and strongly reticulate, the 5–8 pairs of primaries and veins prominent, especially beneath; peduncles solitary in the axils and clustered at the summit, .75 to 1 dm. long, erect or ascending, angled; flowers densely capitate; calyx 1 cm. long, infundibular, the teeth very short, triangular-ovate, yellowish pubescent; corolla about 1.6 cm. long, divided nearly down to the calyx, the lobes oblong, with rounded apices; stamens about thrice the length of the corolla; stigma inconspicuous; legumes (only the very youngest seen) coiled in a circle.

Between Guanai and Tipuani, Apr.–June, 1892 (1392). Related to *P. ferrugineum* and *P. lusorium*.

Inga Bourgoni (Aubl.) DC. Prodr. 2: 434. (*Mimosa Bourgoni* Aubl. Pl. Guian.) Between Guanai and Tipuani, Apr.–June, 1892 (1439).

Inga marginata Willd. Sp. 4: 1015 (excluding the synonymy). Espirito Santo, 1891 (1179). Also collected by Pearce at Coroico.

Inga heterophylla Willd. Sp. 4: 1020. Between Guanai and Tipuani, Apr.–June, 1892 (1421).

INGA PALLIDA sp. n. (Sect. *Euinga*).

Ferruginous-tomentose, the branchlets rather slender, the internodes 4 to 8 cm. long; stipules lanceolate, caducous; petioles two-thirds the length of the internodes, about equalling the internodes of the rhachis, stout, quadrangular; leaves tri-jugate, the petiolules nearly as broad as long, the leaflets 1–2 dm. long, 3–6 cm. broad, the upper successively larger, lance-oblong, inequilateral, with subcuneate base and abruptly acuminate apex, above very pale with minute ferruginous dots, the midrib prominent and ferruginous, the veins impressed, the primaries about 20 pairs, underneath strongly ferruginous, the veins prominent and finely and strongly reticulate; spikes axillary (mostly 3) strongly peduncled, unequal, the longest mostly exceeding the rhachis of the leaf, dense above, slightly interrupted below, about 1.5 cm. thick; bracts linear, nearly as long as the calyx; calyx tubular-campanulate, 3 mm. long, the teeth 1 mm. long, obtusely triangulate; corolla infundibular, 5 mm. long, the lobes 1 mm. long, triangulate; stamens about twice the length of the corolla, united to about the middle; stigma inconspicuous; fruit not seen.

Espirito Santo, 1891 (1165).

ROSACEAE.

Hirtella Americana Aubl. Pl. Guian. 1: 247. Between Guanai and Tipuani, Apr.–June, 1892 (1468)=Rusby's 1311.

Prunus Brittoniana Rusby, Mem. Torr. Bot. Club, 3: (3) 24. Vic. Sorata, Nov., 1892 (1619)=821, also Mandon's 677 and Spruce's 5992.

PRUNUS PEARCEI sp. n. (Sect. Padus).

Branches slender, blackish, the internodes 3 to 4 cm. long; petioles 1.5 cm. long, 2 mm. broad, channelled, reddish-brown; blades 1–2 dm. long, 4–8 cm. broad, oval, the smaller varying to ovate, the larger to obovate, slightly and obliquely pointed, the base rounded and obscurely produced, entire, strongly revolute, coriaceous, both surfaces pale, glabrous, slightly shining, the midrib prominent and deeply but narrowly channelled above, more prominent underneath, the primaries about 5 to 8 pairs, imperfecty opposite toward the base, obscure above, prominent underneath, coarsely anastomosing by the secondaries; racemes solitary

in the axils, shorter than the leaves, weak and slender, rather loosely flowered; pedicels 1 to 1.5 mm. long, very stout, divaricate, articulated and leaving prominent broad scars; calyx puberulent, broadly turbinate, 2 mm. long, shallowly lobed, the lobes broadly semicircular; petals orbicular, 1.5 mm. long; fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1465). Collected also by Pearce at Chailla, alt. 3,000 ft.

Prunus Guanaiensis sp. n. (Sect. Padus).

Branches reddish, slender, the internodes about 2 cm. long; petioles 1–1.5 cm. long, stout; blades 1–1.5 dm. long, 3–6 cm. broad, ovate, the base rounded, the apex slightly pointed, entire, sharply revolute, coriaceous, deep green, drying brown, glabrous both sides, shining above, the midrib channelled above, prominent underneath, veins obscure, or the 7–10 pair of primaries, alternating with as many short intermediate ones, slightly prominent underneath, obscurely anastomosing near the margin; racemes solitary in the axils, distinctly but variably peduncled, about half the length of the leaves, very slender and loosely flowered; pedicels 5 mm. long, very slender, pendulous; calyx-tube hemispherical, 1 mm. deep, 2 mm. broad, the teeth triangular; petals orbicular, scarcely 1 mm. long; fruit (dry) globose, broader one way, about 1 cm. in diameter, the surface deep reddish-brown, dull, conspicuously reticulate.

Between Guanai and Tipuani, Apr.–June, 1892 (1432). Very distinct from the last in form and color of leaves and in all the inflorescence characters.

Rubus megalococcus Focke, Abhand. Nat. Gesell. Brem. 4: 157. Vic. Sorata, Nov., 1892 (1618)=Rusby's 470 and 472 and Mandon's 662.

Rubus roseus Poir. Encyc. 6: 265. Vic. Sorata, 8,000 ft., Nov., 1892 (1617, as to those specimens with strongly angled stem, prickly peduncles and rhachis, and few flowers)=Mandon's 659 and 661. This yields a nearly fleshless bony bitter inedible blackberry, and is in herbaria confused with the next. It appears to me identical with *R. Mandoni* Focke.

Rubus Bogotensis H. B. K. Nov. Gen. 4: 158. Vic. Sorata, 8,000 ft., Nov., 1892. The same as Triana's no. 4189 from New Grenada. No. 684, previously enumerated as *R. Bogotensis*, is distinct and is the equivalent of Rusby's no. 474 and Mandon's 657.

Osteomeles pernettyoides (Wedd.) Britton, Bull. Torr. Bot. Club 16: 11. Below Cochabamba, 1891 (1086).

SAXIFRAGEAE.

Hydrangea scandens Poepp. ex DC. Prod. 4: 666. Between Guanai and Tipuani, Apr.–June, 1892 (1437).

ESCALLONIA BRIDGESII sp. n.

Sparingly armed with short stout more or less recurved prickles; branchlets short, very stout, red, very coarsely and bluntly angled; leaves very numerous, scattered and crowded at the ends of the short branchlets, extremely irregular in size, the largest about 1 dm. long, 3 or 4 cm. broad, obovate with narrowed base and rounded apex, very finely serrate, thickish and rigid, glabrous above, puberulent on the principal veins underneath, the primaries 12 to 15 pairs, very irregular and crooked, venation very prominent and coarsely reticulate underneath; panicles terminal and in the upper axils, on peduncles about one-fourth their length, broad and lax, the branches divaricate or slightly recurved, the rhachis and branches strongly angled, puberulent; bracts green, linear-oblong, acute, longer than the pedicels, nearly equalling the flowers; pedicels divaricate, 2–3 mm. long; calyx-tube hemispherical, 2.5 mm. broad, 5-angled or costate; the triangular-ovate, acuminate acute lobes about as long as the tube; petals white, ovate-oval with rounded apex, nearly twice the length of the calyx-lobes; style nearly as long as the calyx-teeth, stout, angled, the stigma peltate, lobed, nearly 1 mm. in diameter; fruit not seen.

By the action of water the leaves are turned to a greenish-indigo color.

Turedon, 1891 (1130). Also collected in Bolivia by Bridges.

ESCALLONIA ADSCENDENS sp. n.

Glabrate; apparently an alpine dwarf, diffusely branched, the branches ascending, blackish, the branchlets red; leaves crowded, 5–7 mm. long, 4–5 mm. broad, obovate, tapering to the sessile or barely petioled base, the apex rounded, occasionally retuse or short-pointed, serrate or crenate-serrate, revolute, thick and rigid, minutely puberulent when young, faintly papillose, the midrib impressed above, very prominent beneath, the venation indistinct; flowers solitary at the ends of the branchlets, the very short red peduncle continuous with the broadly turbinate angled calyx-tube, which is 3 mm. long, nearly 4 mm. broad, and dark colored; calyx-limb yellowish white, 6 mm. broad, lobed more than halfway to the base, the lobes triangular, acuminate and acute, rigid, green; petals 5 or 6 mm. long, obovate, veiny; ovary depressed, the style very stout, angled, 4 mm. long, the stigma peltate, 1 mm. broad; fruit not seen.

Vic. Cochabamba, 1891 (1089). The same as Mandon's no. 603 and also collected by Pearce at Ayacucho, 12,000 to 13,000 ft.

Windmannia fagaroides H.B.K. Nov. Gen. 6: 54. Below Cochabamba, 1891 (1085).

WINDMANNIA SESSILIFOLIA sp. n.

The dark brown branchlets, inflorescence and midrib tomentellate, otherwise glabrous; leaves sessile or some of them barely petioled; 4–6 cm. long, 3–4 cm. broad, the pair at the base of the inflorescence about half as large, ovate, with slightly cordate base and rounded apex, coarsely but regularly crenate-serrate, the teeth strongly incurved, coriaceous and very thick, pale, shining above, very finely and strongly reticulate both sides, brownish underneath, where the midrib is coarsely hairy, the primaries about 12 pairs, ascending at about 45° with the midrib; racemes geminate at the summits, 1.5–2 dm. long, inclusive of the peduncle which is about a fifth of their length; pedicels mostly about 6 together, very slender, 5 or 6 mm. long, the bracts, when present, nearly half their length, thin and weak; calyx 3–3.5 mm. broad, the sepals ovate, acute, thin; styles slender: fruit not seen.

Vic. Sorata, 10,000 ft., 1892 (1577). The same as one collected by Pearce at Huaycani, 9,000 to 11,000 ft.

WINDMANNIA COCHABAMBENSIS sp. n.

Glabrous throughout; branchlets blackish; leaves subsessile, 4–8 cm. long, 3–5 cm. broad, the floral only slightly smaller, ovate with rounded or subcordate base and acute apex, coarsely and acutely serrate, coriaceous but not thick, pale and shining above, deep rusty-brown underneath, inconspicuously and rather coarsely reticulate, the primaries 15–20 pairs, nearly divaricate; racemes solitary in the upper axils and a terminal pair, 6–8 cm. long, including the peduncle, which is about half that length; pedicels mostly 3 together, 3 mm. long, stout, the bracts more than half their length, ovate, thick and rigid; calyx 4–5 mm. broad, the sepals ovate, tapering and acute, thick and rigid; styles stout. Seen only in young fruit.

Espirito Santo, 1891 (1198). Very near No. 1577, but the venation and toothing of the leaves and the inflorescence mark it clearly distinct. The same as Matthews' no. 1203 from Peru.

CRASSULACEAE.

Tillaea connata R. & P. Fl. Per. 1: 70. Turedon, 1891 (1138).

HALORAGEAE.

GUNNERA BOLIVIANA Morong, sp. n.

Stem compressed, sulcate, nearly 2 cm. broad below, glabrous or with a few minute scales; flowers polygamous, in long subver-

ticillate or scattered spikes, mostly staminate or perfect above and pistillate below; spikes numerous, linear, 4–20 cm. long, the rhachis striate and glabrous, or slightly pubescent; calyx-lobes 2, minute, ovate, denticulate at the apex; petals on the staminate and perfect flowers 2, alternate with the lobes of the calyx, obovate, with a short claw, denticulate or minutely fringed at the apex, 1–2 mm. long, greenish white, caducous; stamens 2, filaments filiform, longer than the anthers; anthers oval, 1 mm. long, 2-celled, dehiscing by lateral slits; pistillate flowers 1 mm. long, apetalous, styles 2, much exserted, papillose, wholly stigmatic; leaves obovate in outline, deep green and glabrous on both surfaces, except in having a few scattered teeth and a slight pubescence on the nerves, deeply several-lobed, the lobes ovate, acute, incisely lobed and with many small cartilaginous teeth on the margins; the leaves on the specimens imperfect, but they appear to be 2- or 3-palmately nerved from the base, the nerves branching above and running into the apices of the lobes, the leaf tapering abruptly into a petiole.

Espirito Santo, 1891 (1214) = Mandon's 598 in Herb. Kew. *Myriophyllum Titicacense* Remy, Analact. Boliv. Near snow-line, Mt. Tunari, 1891 (1031).

COMBRETACEAE.

COMBRETUM GUANAIENSE sp. n.

Branchlets rather slender, the internodes .8–1 dm. long; petioles about 1 cm. long, blades 1 to nearly 2 dm. long, 4–10 cm. broad, ovate to oval, the base subcordate, the apex abruptly contracted into a slender acute point, coriaceous and very thick, above dark green, glabrous and shining, underneath ferruginous-tomentose and sparingly red-lepidote, midrib and 6–8 pairs of primaries prominent both sides, the latter strongly connected by the secondaries; spikes (always?) solitary in the axils, shortly and stoutly peduncled, 1.5 dm. long, densely red-lepidote; calyx-tube 3–4 mm. long, 1 mm. broad, strongly 4-angled, the limb about 7 mm. long, its cylindrical portion 1 mm. long, the open campanulate portion divided one-third of the way down, the lobes broadly triangular, acute, separated by rounded sinuses; petals yellow, obovate with rounded apex, nearly as long as the calyx-lobes; stamens 8, the longest 2 cm. long; fruit not seen.

Vic. Guanai, Apr.–June, 1892 (1320). The same as Rusby's number 623, collected at the same place in 1886. Near *C. Aubletii* DC., but tomentose, and with a different calyx.

COMBRETUM NUMMULARIUM sp. n.

Branchlets slender, terete, dark brown; petioles 5–8 mm. long, blades .75–1 dm. long, 3–6 cm. broad, oval with rounded

base and abrupt short blunt point, deep green and minutely lepidote both sides, the scales dull, gray-green; peduncles and branches of the inflorescence elongated (in fruit), subfiliform; flowers not seen; fruit, as pressed, orbicular or a little broader than long, about 5 cm. across, glabrous.

Between Guanai and Tipuani, Apr.–June, 1892 (1378).

COMBRETUM GLORIOSUM sp. n.

Branchlets stout, light brown, the internodes about 6 cm. long; petioles 1–2 cm. long, blades 1–1.5 dm. long, 6–10 cm. broad, oval-elliptical or the base very slightly produced, entire, not revolute, membranaceous but rigid, above obscurely, underneath conspicuously, golden-lepidote, finely veined, the primaries about 7 pairs, strongly ascending-curved, lightly connected by the secondaries; panicles sessile, of few spikes, the branches very stout, the densely golden-lepidote spikes secund, 1 dm. long, shortly peduncled, densely flowered; calyx-tube nearly 3 mm. long, 1 mm. broad, sharply 4-angled, sharply articulated with the limb, which is 6–7 mm. long, the lower half cylindrical and narrower than the tube, the upper open-campanulate and lobed nearly half its length, the lobes triangular-ovate; petals yellow, oval, two-thirds the length of the calyx-lobes; stamens 8, golden-yellow, the longest 1.5 cm. long, the anthers purple; fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1427). Near *C. Lindbergii* Eichl.

Combretum—sp. Probably undescribed, and near *C parviflorum*, but in the absence of flowers a determination is not possible. Between Guanai and Tipuani, Apr.–June, 1892 (1334) = Rusby's 2635, also without flowers.

SPARATTANTHELIUM GLABRUM sp. n.

A climbing shrub, glabrous except for the minute scales, the branches ramose, flexuous, brown, costate; petioles about 2 cm. long, slender, blades 7–11 cm. long, ovate with rounded base and abrupt obtusish point, entire, minutely lepidote, coriaceous, strongly 3-nerved from the petiole, the venation inconspicuous; flowers not seen; fruiting cyme compound, very broad and open, the branches, pedicels and fruit strictly erect; fruit a little more than 2 cm. long, about 1 cm. broad, ovoid, the apex blunt, tipped with the reddish styles which are about 1 mm. long, strongly but bluntly 6–8-costate, cinereous.

Between Guanai and Tipuani, Apr.–June, 1892 (1371).

MYRTACEAE.

Psidium pomiferum L. Sp. Pl. ed. 2, 672. Between Tipuani and Guanai, Dec., 1892 (1688) = 253.

Myrtus microphylla Humb. et Bonp. Pl. Equin. *pl. 4.* Vic. Mapiri, 12,000 ft., 1892 (1573) = Rusby's 2042.

Myrcia Bangii sp. n.

Ferruginous-tomentose upon the branchlets, inflorescence and venation; branchlets strict, the internodes 5–7 cm. long; petioles 1 cm. long, stout; blades 1–2 dm. long, 4–8 cm. broad, ovate with acute base and abrupt short blunt point, entire, coriaceous, deep green, glabrous above, prominently reticulate underneath, the primaries about 15 to 20 pairs, nearly divaricate, lightly curved, anastomosing close to the margin; inflorescence sessile, trichotomous, open, the flowers densely clustered at the ends of the branchlets, sessile; bud globose, 3 mm. in diameter; calyx-tube broadly campanulate, about 1 mm. long and broad, the lobes about as long, triangular-ovate; petals 3 mm. long; stamens numerous and dense; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1644). Near *M. Selloana.*

Myrcia Paivae Berg, in Mart. Fl. Bras. 14: Part 1, 179. Between Tipuani and Guanai, Dec., 1892 (1700).

Myrcia cucullata Berg, Linnæa, 27: (1854) 97. Between Tipuani and Guanai, Dec., 1892 (1709).

Myrtus osteomeloides.

Apparently alpine and dwarf, diffusely branched, the branchelets crowded, but a few centimeters long, very leafy, the internodes 1–3 mm. long; petioles 1–2 mm. long, very broad; blades 1–1.5 cm. long, 4–8 mm. broad, obovate with narrowed base and rounded retuse apex, very thick, dark green and shining above, yellowish and papillose underneath, entire, strongly revolute, midrib stout and prominent underneath, venation inconspicuous; panicles terminal, short and broad, the branches short and stout; pedicels 3–5 mm. long, stout; bracts manifest, but caducous, narrow; calyx-tube narrowly turbinate, 1.5 mm. long and two-thirds as broad, the limb (yellowish-white), nearly 3 mm. broad, divided midway, the lobes thick and rigid, triangular-ovate, obtuse; petals 3 mm. long, obovate, thickish, drying yellowish; cells about 8-ovuled.

Vic. Sorata, Nov., 1892 (1623). The same as Mandon's 636, and also one by Moritz (no. 1184) probably from Venezuela.

Eugenia uninervia sp. n. (Sub. Eueugenia.)

Glabrous, except the scurfy petioles, much branched and very leafy; the internodes mostly 1–1.5 cm. long; petioles 2–4 mm. long, rather stout; blades 4–6 cm. long, 1–1.5 cm. broad, ob-

long, regularly and equally tapering to both ends, acutish, entire, revolute, coriaceous, the midrib above not prominent, of a brighter green than the leaf-surface, underneath prominent, the venation inconspicuous, coarsely reticulate; pedicels geminate, from an excessively short node-like branch, scarcely bracted, 6–8 mm. long, slender, ascending; calyx-tube turbinate, 2 mm. long and broad, dark-colored, the lobes (4) bright green, about the same length, triangular-ovate, acute; petals nearly twice the length of the calyx-lobes; fruit not seen.

Vic. Guanai, July, 1892 (1602). Near *E. glaucescens* Camb.

Lecythis Andinus sp. n.

Petioles 2–3 cm. long, excessively stout; blades 2–4 dm. long, 7–14 cm. broad, oblong-lanceolate with slightly produced base and very short abrupt blunt point, coriaceous but not thick, glabrous, dark green above, pale underneath, midrib sharply prominent above, underneath very stout and several-ribbed, the primaries about 25 pairs, anastomosing less than 1 cm. from the margin; panicle diffusely branched, the branches stout, much and sharply wrinkled, light brown; pedicels very short, as broad as long; calyx-tube (in flower) 5 or 6 mm. long, turbinate, the limb 1 cm. broad, divided midway, the lobes broadly ovate, rounded; petals (color?) coriaceous, obovate, 2.5–3 cm. long; fruit not seen.

Mapiri, July—Aug., 1892 (1522). Very near Jenman's 4155, from British Guiana.

MELASTOMACEAE.

(Communicated by Dr. A. Cogniaux.)

Arthrostemma campanulare (Naud.) Tr. Melast. 35 (*Heteronoma campanulare* Naud. Ann. Sci. Nat. (III.) **16**: (1851) 153. Espirito Santo, 1891 (1221).

Tibouchina Rusbyi Cogn. Bull. Torr. Bot. Club, **17**: 54. Espirito Santo, 1891 (1246) = Rusby's 2339.

Tibouchina granulosa angustifolia Britton, Bull. Torr. Bot. Club, **17**: 54. Espirito Santo, 1891 (1166) = Rusby's 2245.

Adelobotrys ascendens (Swz.) Tr. Melast. 67. (*Melastoma ascendens* Swz. Fl. Ind. Occ. **2**: 772). Between Tipuani and Guanai, Dec. 1892 (1702).

Miconia calvescens DC. Prod. **3**: 185. Vic. Cochabamba, 1891 (1160) = Rusby's 2264.

Miconia dodecandra (Desr.) Cogn. in Mart. Fl. Bras. **14**: 4 (*Melastoma dodecandra* Desr. Lam. Encyc. **4**: 46). Mapiri, July–Aug., 1892 (1487).

Miconia erioneura Cogn. sp. nov. (sect. Octomeris); ramis apice alternatim hinc et inde valde compressis; foliis magnis, rigidiusculis, elongato-oblongis, breviter obtuseque acuminatis, basi rotundatis, margine integerrimis et densiuscule breviterque ciliatis, 5-plinerviis fere 5-nerviis supra glabris laevibusque, subtus ad nervos breviuscule denseque villoso-hirtellis caeteris brevissime sparseque pilosulis; floribus 5-meris, subsessilibus; calyce glabro, obscure verruculoso, limbo truncato.

Rami robusti, juniores ad nodos brevissime denseque annulato-pilosi caeteris glabrati. Petiolus robustus, densiuscule breviterque pilosus, 3–6 cm. longus. Folia intense viridia, 2–3 dm. longa, 5–8 cm. lata; nervis robustis, supra latis impressis, subtus valde prominentibus; nervulis numerosis, subrectis, subtus satis prominentibus. Paniculae angustae, submultiflorae, 1½ dm. longae, ramis simplicibus vel paullo ramulosis. Calyx basi rotundatus, 6 mm. longus, limbo satis dilatato, 7 mm. lato. Petala glabra, rigida, subquadrangularia, apice oblique subtruncata, 5–6 mm. longa. Antherae anguste oblongae, 4–5 mm. longae. Stylus robustus, apice truncatus et vix dilatatus, 8–9 mm. longus. Species *M. Schlimii* Triana (Cogn. l. c. 757) proxima.

Between Tipuani and Guanai, Dec., 1892 (1683).

Miconia glandulifera Cogn. Melast. 737. Var. Boliviensis Cogn. n. var.

Folia integerrima vel vix undulata, fere 5-prinervia. Calyx dense furfurascens.

Vic. Cochabamba, 1891 (1173).

Miconia holosericea bracteata Cogn. Melast. 237. Between Tipuani and Guanai, Dec., 1892 (1647) = Rusby's 2250 and 2297.

Miconia Ibaguensis (Bonp.) Tr. Melast. 110. Mapiri, July–Aug., 1892 (1525) = Rusby's 2262, 2277 and 2289.

Miconia Matthaei Naud. Ann. Sci. Nat. (III.) 16: 176. Mapiri, July–Aug., 1892 (1492).

Miconia minutiflora (Bonp.) DC. Prod. 3: 189. (*Melastoma m.* Bonp. Melast. 150. *pl. 22.*) Between Guanai and Tipuani, Apr.–June, 1892 (1402) = Rusby's 2276 and 2294.

Miconia persicariaefolia Cogn. Bull. Torr. Bot. Club, 17: 59. Between Guanai and Tipuani, Apr.–June, 1892 (1410) = Rusby's 992.

Miconia prasina (Swz.) DC. Prod. 3: 188. (*Melastoma p.* Swz. Prod. 69.) Between Tipuani and Guanai, Dec., 1892 (1698) = Rusby's 2257 and 2267.

Miconia punctata (Desr.) D. Don. Mem. Wern. Soc. 4: 316. (*Melastoma p.* Desr. Lam. Encyc. 4: 50.) Between Tipuani and Guanai, Dec., 1892 (1685).

Miconia theaezans subtriplinervia Cogn. Melast. 421. Mapiri, July–Aug., 1892 (1537).

Miconia tiliaefolia Naud. Ann. Sci. Nat. (III.) 16: 151. Between Guanai and Tipuani, Apr.–June, 1892 (1453) = Rusby's 2322.

Miconia undata Tr. Melast. 107. Var. Boliviensis Cogn. var. nov. Petiolus 1–2½ cm. longus; folia breviore acuminata, nervis supra paulo impressis.

Mapiri, July–Aug., 1892 (1502).

Clidemia capitellata (Bonp.) D. Don, Mem. Wern. Soc. 4: 310. (*Melastoma c.* Bonp. Melast. 5. *pl. 3.*) Between Tipuani and Guanai, Dec., 1892 (1706).

Clidemia hirta (L.) D. Don, Mem. Wern. Soc. 4: 309, excl. syn. (*Melastoma hirta* L. Sp. Pl. 390). Between Tipuani and Guanai, Dec. 1892 (1705); Espirito Santo, 1891 (1193) = Rusby's 2236, 2239 and 2240.

Bellucia imperialis Sald. et Cogn. in Mart. Fl. Bras. 14: Part 4, 515. Between Tipuani and Guanai, Dec., 1892 (1645) = Rusby's 2330.

Mouriria parviflora Benth. Bot. Sulph. Voy. 97. *pl. 36.* Espirito Santo, 1891 (1206) = Rusby's 2681.

LYTHRARIEAE.

(Communicated by Dr. E. Koehne.)

Adenaria floribunda H. B. K. Nov. Gen. 6: 188. Vic. Sorata, May, 1892 (1311) = 374, and Rusby's 1419.

Cuphea ianthina Koehne, in Mart. Fl. Bras. 13: Part 2, 238. Below Cochabamba, 1891 (1066).

Cuphea ianthina forma (?). Espirito Santo, 1891 (1245). [This species I had determined as *C. cordata* R. & P. Syst. Veg. 119, when Dr. Koehne favored me with his determination as above. The species of this section Dr. Koehne regards as very puzzling. H. H. R.]

Cuphea setosa Koehne, Mart. Fl. Bras. 13: Part 2, 223. Espirito Santo 1891 (1227 and 1238) = Triana's specimen collected at 1000 metres altitude near Bogota, and Lechler's 2322 from Peru.

Cuphea Spruceana Koehne, Mart. Fl. Bras. 13: Part 2, 226. Var. Bangii Koehne, var. nov. Differt a typo foliis obtusiusculus et calyce parce breviterque hispidulis. Espirito Santo, 1891 (1228).

CUPHEA TRICHOPETALA Koehne et Rusby sp. n.

Herba perennis videtur, caulibus paucis 10–17 cm. altis, subascendente-erectis, pubescentibus et glutinoso-hirtellis. Folia internodia circ. aequantia vel paullo longiora, petiolis circiter 1–2 mm. longis, ut caulo vestitis incidentia, e basi obtusiuscule oblonga (10–20 mm.: 4–9 mm.), acuta, rigidula, hirtello-strigosa et superiore pagina saepe parce hispidula, *floralia minora in quave pari subaequalia.* Inflorescentia e racemis brevibus secundis subtrifloris composita circ. 2.5–8 cm. longa. Pedicelli 1–2 mm. longi interpetiolares, apice prophylla 2 minuta ovata instructi. Calyx (8–10 mm.) brevissime calcaratus, pallide violaceo-coloratus nerva intensius violaceis breviter hirtello-pubescentibus et glutinoso-hirtella, dorso subconvexus pauce subampliatus, post anthesis infra medium oblique incrassatus, intus infra stamina in nervis parce villosiusculus, nervis staminum 2 brevium exceptin villosissimis, supra stamina ventre barbatus; lobos dorsalis cateris paullo major et subproductus; appendices brevissimae crassiusculae setulosae. *Petala* 6 violacea calycis ½ longitudinae aequantia, *persistentia*, 2 dorsalia anguste cuneato-obovata, 4 ventralia subbreviora et triente angustiore, *omnia in nervo medio supra parce, subtus dense villosiuscula.* Stamina 11 ; 9 ventralia ad tubi ⅔ lineae deorsum subconnexae inserta, 5 episepala lobos fere, 4 ventralia sinus vix aequantia, 2 dorsalia parva inferius inserta ceterorum insertionem paullo superantia. Ovarium oblique ovatum glabrum in stylum aequilongum villosissimum subulatum, semper inclusum abiens. Discus horizontalis, crassus, semiorbicularis. Ovula 5–6. Semina 3 mm. longa et lata, castanea, margine vix pallidiora testa ibidem haud incrassata, laevia.

Vic. Cochabamba, 1891 (1008).

Adn. Species propter petala in calyce fructifero persistentia corrugato-inflexa ad sectionem *Pseudocircaeam* Koehne juxta *Cupheam persistentem* Koehne rei publicae Argentinae incolam pertinens, sed petalis pilosis non solum inter Cupheas sed inter Lythraceas omnes distinctissima.

Physocalymna scaberrimum Pohl, Flora (1827) 153. Mapiri, July–Aug., 1892 (1527) = Rusby's 2444.

ONAGRARIEAE.

Jussiaea octonervia Lam. Encycl. 3 : 332. Mapiri, July–Aug., 1892 (1494) = Rusby's 1798.

Oenothera rosea Ait. Hort. Kew. 2 : 3. Vic. Mapiri, 8,000 ft., Jan., 1893 (1746).

SAMYDACEAE.

Casearia sylvestris Swz. Fl. Ind. Occ. 2: 752. Var. TOMENTELLA var. nov.

The permanence of its indumentum sufficiently distinguishes it from the type, which is early glabrate. It is probably distinct, but until this composite species is analyzed, this form may as well rest within it.

Vic. Guanai, July, 1892 (1592). Collected also by Pearce at Pampas. Matthews' 1601 from Tarapota, Peru, is similar in other respects than the pubescence.

CASEARIA ATTENUATA sp. n. (Sect. Zuelania.)

Glabrous, except the minutely puberulent pedicels and calyx; branchlets slender, somewhat flexuous, striate, reddish brown, the internodes 1.5–3 cm. long; petioles 5 mm. long, broad; blades 8–13 cm. long, 2–3 cm. broad, lance-oblong, the base tapering into the petiole, the apex contracted into a long attenuate tip, obscurely serrate, coriaceous, conspicuously punctate, dark green, reticulate, the venation slightly prominent beneath, the primaries about 5 pairs, strongly ascending; pedicels slender, about 5 mm. long, articulated at about the middle; calyx crateriform, 3.5–4 mm. broad, pistil 2 mm. long, the ovary broadly pyramidal-ovoid, a little longer than the style, the stigma 0.5 mm. broad, peltate, deeply lobed.

Mapiri, July–Aug., 1892 (1529). The same as Burchell's 8439.

Banara pyramidata Rusby, Mem. Torr. Bot. Club; 3: Part 3, 33. Between Tipuani and Guanai, Dec., 1892 (1692)=365.

Abatia Boliviana (Mand. et Wedd.) Britt. Bull. Torr. Bot. Club, 17: 214. Vic. Sorata, 10,000 ft., Nov., 1892 (1613)=Mandon's 1511 and Rusby's 2468.

LOASEAE.

Klaprothia mentzelioides H. B. K. Nov. Gen. 6: 123. *pl. 537.* Espirito Santo, 1891 (1244).

(For other numbers occurring here, see Part 1.)

TURNERACEAE.

Turnera Weddelliana Urb. et Rolfe, Jahrb. Kgl. Bot. Gart. 2: 90. Between Guanai and Tipuani, Apr.–June, 1892 (1335)= Rusby's 2653 and 2094.

PASSIFLOREAE.

Passiflora coccinea Aubl.; Mast. Gard. Chron. (1873) 605. Mapiri, July–Aug., 1892 (1557)=Rusby's 492.

PASSIFLORA VENOSA sp. n. (Sect. Astrophea).

Glabrous, erect, non-cirrhose, the branchlets elongated, slender, flexuous, striate, green, the internodes 2 or 3 cm. long; petioles 1–1.5 cm. long, blades 7–12 cm. long, 5–7 cm. broad, ovate, with rounded base and acutely short-pointed apex, coriaceous, bright green, conspicuously reticulate-veined, the 5 pairs of primaries prominent both sides, the others so underneath; pedicels mostly geminate, 1–1.5 cm. long, articulated at the junction of the lowest third, the upper portion dark; calyx-tube less than 5 mm. long, one-half broader, the lobes 1.5–2 cm. long, oblong-oblanceolate, obtuse; petals a little longer (apparently violet or light-purple), linear-oblanceolate, obtuse; crown single, of two series, the divisions of the outer a little more than half the length of the petals, darker, linear-oblanceolate and falcate, the upper margin oblique and obscurely sinuately-lobed, those of the inner scarcely a third as long, filiform or narrowly linear; column 1 cm. long to the base of the style-branches; stamens 5, the filaments and anthers each about 5 mm. long, the former inserted a little above the middle of the column; style-branches 3, nearly as long as the column, the stigma large; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1656). Near *P. Mandoni*.

PASSIFLORA URNAEFOLIA sp. n. (Sect. Disemma?)

Glabrous, climbing, stems slender, green, very strongly angled, the internodes 5 or 6 cm. long; petioles 2–3 cm. long; blades (length of midrib) 5–6 cm. long, 6–8 cm. broad, urn-shaped by the abbreviation of the terminal lobe, which is exceeded 1 cm. or more by the two lateral, the outline below the acute apices of the latter regularly rounded, thinly revolute; membranaceous, strongly reticulate, bright green, 3-ribbed; tendrils simple, slender; pedicels geminate in the axils, 2 or 3 cm. long, slender; bracts none; sepals (light-blue?) 2 cm. long, oblong, obtuse; petals about half as long; crown double, the outer of two series; divisions of the outer series linear, 8 mm. long, those of the inner rudimentary, filiform; inner crown a fimbriate thick annulus; stamens 5, inserted at the base of the obovoid ovary, the filaments 1 cm. long, thick and fleshy, white, the anthers 3 or 4 mm. long; styles 3, very slender, green, about 8 mm. long, the stigmas large; fruit on a stipe half its own length, globose.

Mapiri, July–Aug., 1892 (1517). Near *P. Andersonii* DC.; also near *P. capsularis* Lam.

Tacsonia insignis Mast. Gard. Chron. (1873) 1112. *fig. 239.* Mapiri, July–Aug., 1892 (1556)=Rusby's 2465.

Carica Papaya L. Sp. Pl. 1036. Espirito Santo, 1891 (1170) Mapiri, July–Aug., 1892 (1559).

CUCURBITACEAE.

Lagenaria leucantha (Duch.) (*Cucurbita leucantha* Duch. in Lam. Encyc. 2: 150. 1786 = *Lagenaria vulgaris*, Ser. Mem. Soc. Gen. 3: (1) 25. *f. 2* (1825)). Between Guanai and Tipuani, Apr.–June, 1892 (1400). The "Maté Gourd."

Momordica Charantia L. Sp. Pl. 1009. Between Guanai and Tipuani, Apr.–June, 1892 (1360). Introduced.

Citrullus vulgaris Schrad. Linnaea, 12: 412. Between Guanai and Tipuani, Apr.–June, 1892 (1399). Escaped.

Cyclanthera pedata edulis (Naud.) Cogn. Cucurb. 826 (*Cyclanthera e.* Naud. Belg. Hort. (1872) 360. Espirito Santo, 1891 (1260). Escaped; the "Acchocte" = Rusby's 491.

BEGONIACEAE.

Begonia scandens Swz. Prod. Fl. Ind. Occ. 86. Mapiri, July–Aug., 1892 (1509) = Rusby's 678.

Begonia Clarkei Hook. f. Bot. Mag. *pl. 5663* and *5675.* Near snow-line, Mt. Tunari, 1891 (1016) = Rusby's 680.

UMBELLIFERAE.

Hydrocotyle ranunculoides L. f. Supp. 177. Near snow-line, Mt. Tunari, 1891 (1020). Without flower or fruit.

Azorella biloba Wedd. Chlor. And. 2: 195. Near snow-line, Mt. Tunari, 1891 (1017) = Rusby's 1952.

Azorella multifida Pers. Syn. 1: 303. Near snow-line, Mt. Tunari, 1891 (1047).

Eryngium nudicaule Lam. Encyc. 4: 759. Near snow-line, Mt. Tunari, 1891 (1028) = Mandon's 585.

Sanicula Mexicana DC. Prod. 4: 84. Espirito Santo, 1891 (1293).

Orcomyrrhis andicola (H. B. K.) Endl. Gen. Pl. 787 (1833). (*Myrrhis andicola* H. B. K. Nov. Gen. 5: 13. *pl. 419.* [1821]) Vic. Sorata, Nov. 1892 (1615) = Mandon's 1769 and 1770.

ARALIACEAE.

Didymopanax Morototoni (Aubl.) Decne et Planch. Rev. Hort. (1854) 109 = (*Panax M.* Aublet. Pl. Gui. 2 : 949. *pl. 360* = *Sciadophyllum paniculatum* Britton, Bull. Torr. Bot. Club, 17: 37). Between Guanai and Tipunai, Apr.–June, 1892 (1438) = Seeman's 1615, Jenman's 5928 from Demerara, and Rusby's 608.

CAPRIFOLIACEAE.

Viburnum glabratum H. B. K. Nov. Gen. 3 : 428. A little below Cochabamba, 1891 (1087) = Rusby's 2469 and 2584.

RUBIACEAE.

Cinchona ovata R. & P. Fl. Per. 2 : 52. *pl. 195.* Between Guanai and Tipuani Apr.–June, 1892 (1404) = Rusby's "E," etc.

Cinchona Josephiana Wedd. Ann. Sci. Nat. (V.) 12: (1869) 58. Vic. Sorata. Nov., 1892 (1612) = Rusby's "F. 4," etc., distributed as *C. amygdalifolia* Wedd.

Cascarilla magnifolia (R. & P.) Wedd. Ann. Sci. Nat. (III.) 10: 10 (*Cinchona m.* R. & P. Flor. Per. 2 : 53. Between Guanai and Tipuani, Dec., 1892 (1661).

Macrocnemum Sprucei sp. n.

A small tree ; glabrous except upon the leaf-veins underneath ; branchlets short, stoutish, gray, the leaves crowded at the ends; stipules 3 cm. long, 1.5 cm. broad, oval with narrowed base and rounded apex; petioles 2 or 3 cm. long; blades 1–1.5 dm. long, 6 or 7 cm. broad or becoming after the flowering stage nearly twice as large, obovate with cuneate base and slightly produced obtusish apex, veins obscurely pubescent underneath; panicles axillary, 2–3 dm. long inclusive of the peduncles, which comprise nearly half the length, broad, lax, the subulate acute divergent bracts 2–4 mm. long, the pedicels almost absent; calyx-tube 6 or 7 mm. long, infundibular-cylindraceous, the limb 1 mm. long, 3 mm. broad, the teeth triangular, acute, very short; corolla rose-purple, the tube 1 cm. long, cylindrical, the upper third contracted, the limb in the bud hemispherical-ovoid with angled base and rounded summit, the lobes 4 mm. long and broad, rotund-ovate, acute, pilose within; stamens inserted about the middle of the tube, the filaments stout, flattened, bearded, very unequal, the longest reaching to the base of the lobes, the anthers small; style reaching to the base of the corolla-lobes, stout, the stigma small; disc fleshy, annular, prominent; fruit oblong, flattened.

Between Tipuani and Guanai, Dec., 1892 (1635).

The same collected by Spruce. Mr. Bang states that the bark is used for binding thatch and for other purposes requiring great strength and durability, but I think he must refer to some other tree.

Lecanosperma lycioides Rusby, Bull. Torr. Bot. Club, 20 : 431. Vic. Cochabamba, 1891 (1121 and 1122).

Lygistum ignitum (Vell.) Kuntze, Rev. Gen. Pl. 287. (*Guangnebina i.* Vell. Fl. Flum. 1 : *pl. 115*) = *Manettia ignita* Schum. Mart. Fl. Bras. 6 : Part 6, 171. Between Guanai and Tipuani, Apr.–June, 1892 (1372) = Rusby's 1126.

LYGISTUM MICANS (Poepp. & Endl.) (*Manettia m.* Poepp. et Endl. Nov. Gen. et. Sp. 3 : 24 = *M. ignita micans* Schum. in Mart. Fl. Bras. 6 : Part 6, 171). Espirito Santo, 1891 (1255).

LYGISTUM TENUE Britton, sp. n.

Stems elongated, very slender, green, sharply angled toward the summit, and, like the inflorescence, minutely scabrous; stipules short and inconspicuous; petioles 3–5 mm. long, blades 4–7 cm. long, 2–3 cm. broad, ovate with rounded base and acuminate obtuse apex, entire, bright green, glabrous above, minutely scabrous on the midrib underneath, thin, venation very slender and inconspicuous, primaries about 7 on each side; racemes solitary in the axils, compound, secund, few and loosely flowered, about 4 cm. long, the bracts 2 mm. long, oblong, acute, green, the bractlets linear; pedicels 2–3 mm. long, slender; calyx-tube from elongated-hemispherical to truncate-ovoid, 2.5 mm. long, the triangular acute teeth half as long, recurved-spreading; only undeveloped corollas seen, apparently narrowly infundibular, about 1 cm. long; fruit brown, globose, about 4 mm. in diameter.

Vic. Sorata, Nov., 1892 (1725). The same as Rusby's no. 2158, collected near Mapiri. Description taken from Mr. Bang's specimens.

Lygistum —— sp. near *L. umbellatum* and apparently undescribed; but material insufficient. Espirito Santo, 1891 (1268).

Lygistum —— specimens too incomplete. Espirito Santo, 1891 1269.

CONDAMINEA ANGUSTIFOLIA sp. n.

Finely puberulent, except the glabrous upper leaf-surfaces, stipules and corolla; branchlets stout, terete; stipules 3–5 cm. long, 7 mm. broad, lanceolate, long-attenuate, entire, rigid, brownish-green, finely nerved, the midrib very prominent on the upper side, like a keel; petioles less than 1 cm. long and very stout; blades 2.5–3.5 dm. long, 6–8 cm. broad, oblong with subcor-

date base and abruptly short-pointed apex, entire, coriaceous and very thick, above pale green, glabrous and slightly shining and the veins inconspicuous, underneath softly puberulent with the midrib and 18 to 20 pairs of primaries very prominent; cymes very stoutly peduncled, successively trichotomous, the branches widely spreading and elongated; pedicels proper only 5–8 mm. long, very stout, continuous with the calyx-tube which (in flower) is 1 cm. long, infundibular, strongly 4-angled, the limb hemispherical or cup-shaped, 6–8 mm. broad, coriaceous, reddish, the margin sinuately lobed; corolla thick, purple, in bud ovoid with rounded short apiculate apex, the tube campanulate, about 1 cm. long, the lobes ovate, acute, 7 mm. long, 5 mm. broad; filaments inserted a little below the middle of the corolla, nearly 2 mm. broad at the base, the anthers oblong, 8 mm. long, 2 mm. broad, lightly exserted; style about equalling the filaments, very stout; fruit oblong, truncate.

Between Guanai and Tipuani, Apr.–June, 1892 (1429).

Chrysoxylon tubulosum (A. Rich.) Kuntze, Rev. Gen. Pl. 278 (*Macrocnemum tubulosum* A. Rich. in DC. Prod. 4: 403 = *Pogonopus tubulosus* Schum. in Mart. Fl. Bras. 6: Part 6, 265). Between Guanai and Tipuani, Apr.–June, 1892 (1344) Dec. 1892 1716) = Rusby's 2090.

Sipanea pratensis Aubl. Pl. Guian. 1: 147. Mapiri, July–Aug., 1892 (1488) = Rusby's 2461.

Isertia reticulata Britton, sp. n.

Arborescent; densely and rather harshly short-tomentose throughout; branchlets very stout, obtusely quadrangular; stipules 1.5 cm. long, ovate, acuminate and very acute, entire, obtusely keeled; petioles 2.5–4 cm. long, very stout, semi-cylindrical to nearly cylindrical, the upper surface nearly plane; blades 2–4 dm. long, 1 to nearly 2 dm. broad, obovate, the base acute to cuneate, apex acutely very short-pointed; entire, revolute, thick and rigid, very finely bullate, above dark green, underneath white, the 20 to 25 or 30 pairs of primaries impressed above, very prominent beneath, nearly divaricate, intercommunicating almost at the margin; peduncle and rhachis exceedingly stout, 2 or 3 dm. long, the bracts and bractlets similar to the stipules and smaller; calyx turbinate, about 8 mm. long, the teeth very short; corolla thick and rigid, 4 cm. long, the tube infundibular, the mouth 1.5 cm. broad, the rounded lobes about 7 mm. long, darker than the tube; anthers 7 mm. long, reaching to the middle of the corolla-lobes; style slightly exceeding the stamens.

Between Guanai and Tipuani, Apr.–June, 1892 (1358)=Rusby's 1895.

SABICEA CUNEATA sp. n.

Gray-tomentose throughout except the strigose upper leaf-surfaces; branchlets elongated, stout, striate, purplish, the internodes 4–6 cm. long; stipules 7 or 8 mm. long, 5 mm. broad, ovate, blunt, entire, herbaceous, strongly reflexed; petioles .75–1.5 cm. long, margined; blades .75–1.5 dm. long, 3–4.5 cm. broad, oval-ovate, acuminate and acute at each end, entire, above dark green and strigose, underneath softly gray-tomentose; cymes axillary, trichotomous, on short very stout peduncles, mostly 15–20-flowered, about 2 cm. broad; bracts about 5 mm. long, linear and tapering, herbaceous, recurved, the pedicels 3–5 mm. long; calyx-tube (in flower) 2 mm. long, globose-urceolate, the lobes 5 mm. long, linear-tapering, herbaceous, recurved; corolla purple, pilose, 1 cm. long, the tube infundibular-cylindraceous, the lobes 4 mm. long, ovate, obtuse, recurved-spreading; capsule blackish, depressed-globose, 5 mm. in diameter.

Between Guanai and Tipuani, Apr.–June, 1892 (1380).

The species appears intermediate between one collected by Mathews (no. 1951), one by Linden (New Grenada no. 1492) and one by Pearce (Moro, Jan., 1866).

Hamelia patens Jacq. Stirp. Amer. 74. *pl. 50.* Espirito Santo, 1891 (1222) = Rusby's 2105.

Bertiera Guianensis Aubl. Pl. Guian. 1: 180. *pl. 69.* Between Tipuani and Guanai, Dec., 1892 (1712) = Rusby's 2118.

Amaioua corymbosa H. B. K. Nov. Gen. 3: 419. *pl. 294.* Between Tipuani and Guanai, Dec., 1892 (1655).

GUETTARDA ALBICAULIS sp. n.

Branches elongated, terete, whitish, the flowering branchlets short, stout, rough with numerous leaf-scars; stipules brown and subscarious, 5 mm. long, triangular-ovate, very acute, connate; petioles about 2 mm. long, very stout, pubescent; blades 4–7 cm. long, 2–4 cm. broad, ovate, abruptly short-pointed, obtuse, the margin obscurely sinuate; thick and coriaceous, dark-green, glabrous, with impressed midrib and 4 or 5 pairs of primaries above, softly pubescent, scrobiculate in the axils and with sharply prominent veins underneath; terminal internode of the flowering branchlet purple, striate, pilose, clavate, the peduncles axillary in its triangular-ovate acute bracts, 5–8 mm. long; flowers sessile, about 5–8; calyx 2 or 3 mm. long, 2 mm. long at the summit, lobed nearly to the middle, the teeth white-pilose, ovate, acutish; corolla pilose, white (?), the tube 8 mm. long, very slenderly infundibular, the lobes 3 mm. long, ovate, recurved; stamens equalling the tube; style nearly equalling the corolla-lobes, the flat

branches nearly 1 mm. long, oblong with rounded apex; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1636).

Chomelia tenuiflora Benth.; Rusby, Mem. Torr. Bot. Club, 3: Part 3, 45. Between Tipuani and Guanai, Dec., 1892 (1738) = 342.

The characters of the fruit (mature ?) of this species, unknown until now, are as follows: Nearly 1 cm. long, 2–2.5 mm. broad, oblong, the base slightly narrower, the apex subtruncate, tipped by the conspicuous cup of the calyx-limb, which about equals the strongly recurved teeth, blackish, minutely hispidulous, irregularly and rather lightly costate, slightly curved.

Chiococca brachiata genuina Muell. Arg. Mart. Fl. Bras. 6: Part 5, 51. Mapiri, July–Aug., 1892 (1507).

Coffea Arabica L. Sp. Pl. 172. Mapiri (Cult.), July–Aug., 1892 (1560).

COUSSAREA RUDGEOIDES sp. n.

Glabrous; branchlets stout, somewhat flexuous, fleshy, the internodes 2–3 cm. long; stipules 3 or 4 mm. long, 4 or 5 mm. broad, the summit rounded; petioles proper scarcely perceptible; leaves 1.25–2.5 dm. long, .5–1 dm. broad, oval, abruptly short-acuminate at both ends, entire, bright green, thin but rigid, the primaries 10–13 pairs, intercommunicating about 5 mm. from the margin; cymose panicles mostly solitary at the summit, successively trichotomous, 5 or 6 cm. long, including the stout peduncles which comprise nearly half their length, 4 or 5 cm. broad, dilated at the branching-points, the bracts and bractlets wanting, the flowers sessile or very short-pedicelled; calyx turbinate-campanulate, 4-angled, truncate, the border obscurely sinuate; expanded corollas not seen, in the bud 6–8 mm. long, lance-oblong, the lobes free at the tip.

Between Tipuani and Guanai, Dec., 1892 (1666.) Very near Spruce's 2486.

Faramea salicifolia Presl. Symb. Bot. 24. *pl. 70.* Between Tipuani and Guanai, Dec., 1892 (1684) = Rusby's 2626.

Faramea anisocalyx Poepp. & Endl. Nov. Gen. et Sp. 3: 28. Between Tipuani and Guanai, Dec., 1892 (1641) = Spruce's 4873.

Mapourea brachypoda Muell. Arg. in Mart. Flor. Bras. 6: Part 5, 422. Between Tipuani and Guanai, Dec., 1892 (1710) = Rusby's 1882.

MAPOUREA PALLESCENS sp. n.

Glabrous; branchlets stoutish, the internodes 3–4 cm. long; stipules 7 or 8 mm. long, ovate with rounded apex, entire, brown, caducous; petioles about 1 cm. long; blades .75–1.5 dm. long, 4–8 cm. broad, oval, both base and apex very slightly produced, but obtuse, thickish, very pale, the 10–12 pairs of primaries widely diverging and only slightly falcate-ascending; peduncles 5 or 6 cm. long, erect, stout, green, sulcate; cyme and its branches umbelliform, about 4 cm. long by 6 cm. broad, the rigid bracts extremely short, the flowers sessile; calyx campanulate, barely 1 mm. long, 1.5 mm. broad, the margin truncate, entire or barely sinuate; corolla 8 mm. long, in bud obovoid-pyriform with truncate apex, the lobes 3 mm. long, oblong, the apex rounded, in the bud slightly inflexed; filaments inserted in the pilose throat, very short, the anthers oblong, 1.5 mm. long, a little surpassing the base of the lobes; style much exserted, its branches as long as the anthers, spatulate-oblong; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1675). Very near Schomburgk's Brit. Gui. 1708 B.

Mapourea? Apparently an undescribed species of this genus, but the specimens present only fruit in a very immature state. Between Tipuani and Guanai, Dec., 1892 (1693 and 1714) = Rusby's 1883.

Mapourea sp.? A positive generic determination cannot be given in the absence of fruit. If a *Mapourea*, it is not published. Between Tipuani and Guanai, Dec., 1892 (1670).

Psychotria cuspidata Bredem. ex R. & S. Syst. Veg. 5: 192. Between Guanai and Tipuani, Apr.–June, 1892 (1713). Apparently = Rusby's 2112.

Psychotria flexuosa Willd. Sp. 1: 966. Between Tipuani and Guanai, Dec., 1892 (1653) = Matthews, Peru, 1488.

Psychotria tabacifolia Muell. Arg. in Mart. Fl. Bras. 6: Part 5, 236. Espirito Santo, 1891 (1204) = Rusby's 1880.

Psychotria tomentosa (Willd.) Muell. Arg. in Mart. Fl. Bras. 6: Part 5, 370. Between Guanai and Tipuani, Apr.–June, 1892 (1469) = Rusby's 853, 854 and 855.

Psychotria.—Between Tipuani and Guanai, Dec., 1892 (1649). A positive determination of this plant must await the publication of Part IV.

PSYCHOTRIA TRIVIALIS sp. n.

Glabrous; branchlets slender, lax; stipules 2 or 3 mm. long, triangular-ovate, acute, deciduous; leaves .5 to 1 dm. long, 2–3 cm. broad, oblong-ovate, the base tapering into a short petiole, the apex abruptly acuminate, acute, entire, thin, pale, the primaries 6 or 8 pairs, strongly ascending; peduncles solitary, terminal, 1–3 cm. long, sharply angled, the panicles 3 or 4 cm. long and broad, trichotomous, the very slender pedicels 2 or 3 mm. long; flowers not seen; fruit at maturity depressed-globose, 4 or 5 mm. broad, the calyx-limb deciduous, bright red, the seed light brown, deeply sulcate.

Espirito Santo, 1891 (1186)=Schlimm's No. 584, from New Granada, 4,000 ft.

PSYCHOTRIA LUXURIANS sp. n.

Glabrous, except the minutely puberulent inflorescence; branchlets elongated, ascending, somewhat quadrangular; stipules connate, 6 or 7 mm. long and broad, triangular, acute, entire; leaves 1.25–2.5 dm. long, .5–1 dm. broad, oval, the base very abruptly acuminate into a short petiole, the apex similarly pointed; entire, bright green, pale underneath, very thin, the primaries about 16 pairs, falcate-ascending; peduncles .8–1 dm. long, purplish, quadrangular, the panicle 1–2 dm. long, 1–1.5 dm. broad, pyramidal, obtuse, loose, the rhachis flexuous, the branches divaricate, the bracts linear-oblanceolate, herbaceous, 1–1.5 cm. long; flowers actually sessile, but mostly appearing pedicelled by terminating the branchlets; bud ovoid, with rounded apex; calyx green, turbinate-campanulate, 1.5 mm. long, toothed midway, the teeth acute, tardily, if at all, deciduous; corolla infundibular, about 4 mm. long, the ovate, obtusish lobes 1.5 mm. long; fruit 3 or 4 mm. long, deeply sulcate.

Between Tipuani and Guanai, Dec., 1892 (1741) = Mathews, Peru, 1167. Very near *P. platyphylla* DC.

Psychotria rigida Kunth, Nov. Gen. 3: 289. Var. BREVIPES var. nov.

Differs from the type in the petioled leaves and very short and stout branchlets, peduncles and branches of the panicle, all of which are blackish.

Between Tipuani and Guanai, Dec., 1892 (1667).

Psychotria—specimen not matched at Kew, but cannot be determined without flowers. Espirito Santo, 1891 (1184).

Psychotria—unfit for determination. Between Tipuani and Guanai, Dec., 1892 (1727).

Palicourea riparia Benth. Hook. Journ. Bot. 3: (1841) 224. Espirito Santo, 1891 (1243).

Rudgea valida sp. n.

Tomentose, except the short-strigose upper leaf-surfaces; branchlets stout; stipules 1.5 cm. long, lanceolate, tapering to an acute point, inequilateral, connate about one-third of their length; petioles scarcely 1 cm. long, very broad; blades 1.5–2 dm. long, 6–8 cm. broad, with short-acuminate base and apex, thickish, rigid, the primaries 18–20 pairs, slender, regular and parallel, falcate, prominent, especially beneath where they are connected by the irregularly reticulate secondaries; peduncle terminal, stout, quadrangular, about half as long as the rhachis; panicle dense, not equalling the leaves, its bracts lance-linear, thin, the longest about 5 mm. long; flowers sessile, the calyx very short, the teeth about as long as the tube, broadly ovate, acute; corolla-tube cylindraceous, 4 mm. long, the strongly recurved lobes 2 mm. long; fruit not seen.

Mapiri, July to August, 1892 (1564). = Mathews' Peru, 1494, and near Kallbreyer's Antioquia, 1647. Species near *R. viburnoides* Benth.

Endlichera umbellata (Spreng.) Schum. Mart. Fl. Bras. 6: Part 6, 38.

Between Guanai and Tipuani, Apr.–June, 1892 (1467) = 1000*

Borreria verticillata (L.) Meyer, Prim. Fl. Esseq. 83. *pl. 1.* Between Guanai and Tipuani, Apr.–June, 1892 (1341) = Rusby's 1401

Richardia cruciata sp. n.

Sparingly and coarsely setose-hispid; root stout, vertical, branching; stems 1–3 cm. long, ascending from the stout crown, branching from the base; setae of the stipules few, whitish-cartilaginous, 1.5 mm. long; leaves closely sessile, 1–1.5 cm. long, 4–8 mm. broad, ovate-oval, acute, strongly revolute, thick and rigid, bright green, 3–4-nerved, the nerves impressed above, very prominent underneath; flowers terminal, closely sessile, few; calyx-tube lanceolate, 2 mm. long, the lobes of equal length, lance-linear, very acute, setose-tufted at the apex; corolla-tube infundibular, 3.5 mm. long, the lobes a little shorter, ovate, acute; stamens reaching about to the middle of the corolla-lobes; style capillary, about as long as the corolla-lobes, the stigma large, capitate, 4-lobed; fruit 4-coccous.

I was at first inclined to regard this as a *Diodia*, in spite of the fruit structure, which is typical of *Richardia*; but Mr. N. E. Brown has kindly corrected me and shown that this, as well as *D. tetracocca*, which it resembles, belongs in *Richardia*.

Near snow-line, Mt. Tunari, 1891 (1034).

GALIUM COCHABAMBENSE sp. n.

Stems very slender, whitish, strongly quadrangular, sulcate, retrorsely hispid; leaves sessile, 1.25–2.25 cm. long, 1.5–2.5 mm. broad, linear-oblong, acute, pale, 1-nerved, retrosely hispid on the margin and less so on the midrib; peduncles terminal, mostly 2, 2- or 3-flowered, the pedicels divaricate, stoutish, 3–5 mm. long; corolla 1.5 mm. long, the lobes broad, ovate, rounded; fruit not seen.

Vic. Cochabamba, 1891 (1145).

VALERIANEAE.

Valeriana andina Britton, Bull. Torr. Bot. Club, 17: 264. Near snow-line, Mt. Tunari, 1891 (1030) = Rusby's 878.

Valeriana Boliviana Britton, Bull. Torr. Bot. Club, 17: 263. Vic. Sorata, May, 1892 (1300) = Rusby's 871, 875, 1237, etc.

Valeriana, apparently an undescribed species near *V. scandens*, but plant too young. Vic. Sorata, May, 1892 (1319).

COMPOSITAE.

Vernonia laurifolia DC. Prod. 5: 30, *fide* Dr. L. Radlkofer. Mapiri, July–Aug., 1892 (1534) = 617 and (?) Rusby's 1617.

Vernonia arborescens Swz. Fl. Ind. Occ. 2: 1320. Espirito Santo, 1891 (1207).

Vernonia, apparently *V. missionis* Gardn. Hook. Lond. Journ. Bot. 6: 422, in a young state. Between Guanai and Tipuani, Apr.–June, 1892 (1420) = Traill's 453 from upper Brazil.

VERNONIA BANGII sp. n.

(*Lepidoploa scorpioideae verae.*) Summit of stem only seen, Robust, apparently erect, simple, corymbosely branched above, the inflorescence in my specimen nearly 3 dm. high and broad; puberulent throughout, except the upper leaf-surface, which is scabrate; stem finely angled; upper leaves on stoutish petioles 2–3 cm. long, the blades 1.5–2 dm. long, by 5–7 cm. broad, narrowly and regularly ovate, with rounded or obscurely produced base, regularly tapering to the acute apex and with the lightly revolute margin distantly serrate, the teeth reduced to minute blunt mucros; texture thickish, somewhat rigid, veins slightly prominent, reticulated, elevated both sides, the primaries 15 to 20 pairs; floral leaves few and large; heads closely sessile, rather loosely arranged along the slender sharply angled ultimate branchlets, dull grayish yellow, about 7 mm. high and broad; involucre hemispherical, 4 mm. high and a

little broader, the scales 40-60, in 4 or 5 series, dirty yellowish-white with broad green middle portion, thick and rigid, the appressed or slightly recurved apex obtuse to rounded; bristles of the pappus rather few and stout, nearly 3 mm. long, a little exceeding the infundibular tube of the corolla, the lobes of which are lanceolate, acutish, 1.5 mm. long; akenes (immature) black, less than 1 mm. long, nearly as broad.

Between Mapiri and Tipuani, July–Aug. 1892 (1483).

Species near *V. Pacchensis*.

VERNONIA COSTATA sp. n.

(*Lepidoploa scorpioideae verae.*) Stout, widely branching, the inflorescence loosely paniculate; branches about 8-angled, ferruginous and slightly cinereous, those of the inflorescence ferruginous only; only the upper leaves seen, their petioles 2 cm. long, 5 mm. broad, the blades 2–2.5 dm. long, 7–8 cm. broad, lance-ovate with sub-rotund base, acute apex and almost imperceptibly sinuate-dentate margin, very thick and rigid, above finely strigose, ferruginous on the veins, underneath silvery or slightly yellowish, very softly tomentose; midrib slightly impressed above and, like the 20–25 pairs of primaries, extremely strong and prominent beneath, the latter connected very close to the margin; heads sessile, at length loose, 8 or 9 mm. long; involucre open-campanulate, 6 mm. long, the scales in 4 or 5 series, loosely imbricated, the inner series very much longer, lanceolate, keeled, pungent, purplish-brown, lightly white-hairy; pappus-bristles white, acute, faintly scabrous, 4 mm. long, the outer complanate; corolla light purple, variously shaded with yellow, the slender tube 4.5 mm. long, the narrow lobes 1 mm. long; style-branches yellow.

Mapiri, July–August, 1892 (1472).

VERNONIA JUBIFERA sp. n.

(*Critoniopsis?*) White-tomentose, the stem and branches densely shaggy, the upper leaf-surfaces scabrous; stems apparently tall and widely branching, terete or nearly so, the inflorescence open-paniculate; leaves amplexicaul, with blunt or rounded auricles 1–1.5 cm. long and broad, oval to slightly ovate, or obovate, the lower fourth contracted somewhat abruptly, the apex abruptly short-acuminate, obtuse, the margin irregularly and very lightly crenate-dentate; not coriaceous, the veins lightly impressed above, elevated beneath, crooked and slender except the midrib, which is very stout, reticulate, the primaries 15–18 pairs, lightly ascending and inter-arched near the margin; heads sessile and crowded on the short branchlets, mostly in threes, nearly 1 cm. long; involucre turbinate-campanulate, about 4 mm. long and broad, the scales in 4 or 5 series, loosely imbricated, tawny and variously

tinged with purple, especially the inner which are successively much longer, lanceolate, obtusish, straight, concave, thick and rigid; pappus 4 mm. long, rather copious, fine, white; corolla bright purple, the tube infundibular, slender, 3 mm. long, the lobes narrow, 1.5 mm. long; style-branches purple; akene brown, faintly hispid, 2 mm. long, .5 mm. broad at the apex, tapering to .25 mm. at the base.

Between Mapiri and Tipuani, July–Aug., 1892 (1554).

VERNONIA TRIXIOIDES sp. n.

(*Paniculatae.*) Apparently erect and sub-simple, rather slender, paniculately branched at the summit, glabrous except the inflorescence, the stem brown, finely many-angled, the branchlets of the inflorescence green, very strongly few-angled; petioles 1–2 cm. long, strongly flattened, the base somewhat dilated; blades about 1.5 dm. long, 5–6 cm. broad, lance-ovate with rounded base, regularly acuminate and acute apex and serrate margin with distant small strongly appressed spinulose teeth; green, membranaceous, venation not prominent, faintly reticulate, the primaries about 10 pairs, moderately curved; panicle naked except for a few small subulate bracts, several dm. high, 2–3 dm. broad, open, the branches at about 45°, slender; peduncles slender, .5–1.5 cm. long, one-bracted near the involucre, bearing solitary heads nearly 2 cm. long; involucre 1 cm. long and broad, or broader, hemispherical-campanulate, the bracts in 5 or 6 series, appressed, ovate, abruptly short-acuminate and pungent, 1-nerved, slightly concave, green with yellowish margin, puberulent and ciliate; pappus-bristles unequal, 6–9 mm. long, copious, fine, white, acute, minutely scabrous, the outer similar, ¼ to ⅓ as long; corolla bright purple, the tube 7 or 8 mm. long, the limb 4 mm. long; akene dark brown, 2 mm. long, strongly 8-or 10-costate, the ribs densely white-bearded.

Mapiri, July–Aug., 1892 (1484).

VERNONIA ROBUSTA sp. n.

(*Lepidoploa scorpioideae foliatae axillares.*) Stem stout and coarse, much and widely branched, the branchlets thickish but weak, elongated, strongly ascending and sub-drooping at the ends, flexuous, canescent; petioles flat, very short and nearly as broad, the blades (lower not seen) 7–10 cm. long, 3–5 cm. broad, irregularly and inequilaterally oval to ovate, with rounded base, abruptly acute apex and revolute, very obscurely sinuate-dentate margin, brownish green, above scabrous, underneath harshly tomentellate, thick, rigid, of very coarse texture, strongly rugose; the midrib, 8–10 pairs of primaries, and few secondaries very prominent, coarsely reticulate; floral leaves similar, ¼ to ⅓ as large; heads 2–3 cm. apart, solitary in the axils, very large, about 2 cm.

long; involucre sub-globose, or broadly campanulate with contracted mouth, 1 cm. long, 12–14 mm. broad, squarrose, the scales in 6 or 7 series, canescent, green with purple tips, margins and veins, ovate, acuminate and acute, rigid; pappus 8 mm. long, tawny, coarse, blunt, serrate, the outer sub-paleaceous, nearly 1 mm. long; corolla purple, the slender tube 7 mm. long, tomentose, the limb 4 mm. long; anthers dull white, large, much exserted; akene (immature) 4 mm. long, light brown, sparsely hispid, the 10 very strong ribs black-tipped.

Between Guanai and Tipuani, April to June, 1892 (1424).

Near Glaziou's 18,328 and Pearce's specimen of *V. macrophylla.*

Piptocarpha Lechleri (Sch. Bip.) Baker, in Mart. Fl. Bras. 6: Part 2, 127 in obs. (*Carphobolus L.*, Sch. Bip. Pollichia [1863] 428).

Mapiri, July–Aug., 1892 (1506) = Lechler's 2479.

Stevia grandidentata Sch. Bip. Bull. Soc. Bot. Fr. 12: (1865) 81. Name only.

Hispidulous-pubescent throughout, the upper leaf-surface strigose; tall, erect, simple or corymbosely branched at the summit; upper leaves only seen, opposite, their petioles 1–2 cm. long, margined, dilated and sub-connate at the base; blades 5–8 cm. long, 2.5–4 cm. broad, angularly ovate, the base rounded, in the smaller very abruptly contracted into the margined petiole, in the lower probably becoming cordate, the apex obtusish to obtuse, the margin bluntly and rather coarsely dentate, pale, the veins reticulate and rather sharp underneath; floral leaves similar, becoming gradually smaller, the floral branchlets subtended by lanceolate bracts; heads very numerous, densely crowded at the ends of the branches, deep purple, 11–12 mm. long; involucre 6 mm. long, deep purple, the base green, akene (immature) 4 mm. long, very slender, sharply 5-angled, glabrous; pappus of 5 very small ovate acute scales, less than .5 mm. long; corolla 7 mm. long, narrowly funnel-form, the lower portion of tube 2 mm. long, dark, pilose, the upper much broader, glabrescent, the limb 1 mm. long.

Vic. Cochabamba, 1891 (1149).

Exactly the same as Mandon's no. 245.

Stevia obovata sp. n.

Stem very short, branching from the base, the branches several, 1.5–2 dm. long in my specimens, ascending, slender, sinuous, branched from the upper axils, very leafy at the base, with elongated internodes above, terete, dark purple, pubescent above; leaves sessile, 2–3.5 cm. long, 8–12 mm. broad, obovate to oblanceolate with blunt apex and slightly sinuate-dentate

margin, thickish, dark green, sparsely hairy on the veins beneath and ciliate, the veins very prominent on both sides, irregularly reticulate; corymbs dense, 1.5–3 cm. broad; heads 1 cm. long, the involucre 5 mm. long, deep purple, of 4 oblanceolate acutish pubescent scales; akene (in flowering stage) 3 mm. long, whitish, sharply angled; pappus of unequal aristate paleæ, the shorter .5 mm., the longer 1.5 mm. long; corolla-tube infundibular, 4 mm. long, 1 mm. broad at the apex, dark-purple, sparsely hairy, the lobes oval-elliptical, nearly 2 mm. long, light purple with lighter margins.

Vic. Cochabamba, 1891 (1027).

The same as Spruce's 5042, etc. although the corollas of the latter are smaller.

Eupatorium conyzoides Vahl, Symb. 3: 96. Espirito Santo, 1891 (1208). Between Guanai and Tipuani, Apr.–June, 1892 (1444) = Rusby's 1621 and 1624.

Eupatorium glomeratum DC. Prod. 5: 154. Mapiri, July–Aug. 1892 (1514).

Eupatarium sordescens DC. Prod. 5: 167. Var. Bolivianum var. nov. Differs from the type in being ferruginous and in the longer black akenes with more tapering base.

Between Guanai and Tipuani, Apr.–June, 1892 (1464).

Eupatorium Bangii sp. n.

(*Praxelis.*) Branched from near the base, the branches apparently sub-ascending, 3–5 dm. long, the stems green, angled, pubescent and slightly harsh, the upper internodes dilated at the summit; leaves 4–8 cm. long, 1.5–3 cm. broad, angularly ovate with acute apex, sub-cuneate base narrowed into a short margined petiole and distant coarse short teeth; above strigose-hispidulous, underneath pale and sparsely pilose, 3-nerved and sparsely veiny; peduncles elongated, strongly angled, stout, enlarged at summit, cymose, naked, or with a pair of foliar leaves; heads solitary, at maturity nearly 1.5 cm. long and broad; involucre 1 cm. long, regularly campanulate, the scales in 5 or 6 series, imbricated and closely appressed, the outer successively shorter, obovate to spatulate, with rounded bright purple tips, conspicuously 3–7-nerved; involucre slightly convex, foveolate, hollow; akenes curved, 4 mm. long, stout, black, with 5 very strong and sharp white hispid angles; pappus single, sub-equal, 5 mm. long, coarse, sharply serrate, obtuse, dull white; corolla purple, the tube infundibular, 4.5 mm. long, the lobes .5 mm. long; anther-appendages manifest, and like the style-branches, little exserted.

Vic. Cochabamba, 1891 (1133).

Species near *E. liatridea* and *E. Guanaiense*. Also collected in Bolivia by Bridges.

EUPATORIUM CONNIVENS sp. n.

Shrubby, much branched, the branches strongly ascending, dark brown, striate, the branchlets erect, slender, green, few-angled, scabrellate-pubescent; leaves subsessile, 3–6 cm. long, 1–2.5 cm. broad, ovate to lance-ovate, with regularly tapering obtusish apex, base abruptly contracted into a very short petiole-like portion, and distantly and coarsely serrate margin, above scabrous, underneath prominently reticulate, and sparsely and harshly hairy on the veins, somewhat 3-ribbed; heads closely aggregated upon the erect branchlets, either sessile or upon short peduncles dilated at the summit, 1.5 cm. long; involucre 1 cm. long and 3–4 mm. broad, cylindraceous, the scales in many series, the outer successively shorter, closely appressed, obovate-spatulate with regularly rounded purple apex, nerved, the innermost linear-oblanceolate and obtuse; involucre very small, conical, about 15-flowered; akene 4.5 mm. long, black, with sharp white angles; pappus 6.5 mm. long, scanty, unequal, tawny, minutely serrate; corolla-tube 6 mm. long, the lobes a little over 1 mm. long.

Vic. Cochabamba, 1891 (1114).

Near *E. paucidentatum* Sch. Bip., but much more robust and with heads much longer. The same as Mandon's 248. Also collected by Bridges in Bolivia.

EUPATORIUM VENOSISSIMUM sp. n.

Tall and coarse, widely and laxly branching; stem sinuous, purple, finely angled, the branches similar, lighter, slender, the branchlets pale-green, minutely hispidulous; petioles .5–1.5 cm. long, margined, at the base, abruptly dilated and connate; blades 5–12 cm. long, 2–5 cm. broad, ovate to lance-ovate, with subrotund to slightly produced base, regularly tapering acute apex and coarsely and sharply serrate margin, thin, pale, minutely scabrate and very sparsely hairy both sides, 3-ribbed and prominently veiny both sides, especially so beneath, the veins whitish; heads corymbed, the corymbs loosely branched, but the heads closely crowded on the ultimate branchlets, mostly short-peduncled, the peduncles pubescent; heads 3.5–4 mm. long, the involucre nearly equalling the pappus, the scales about 8, loosely imbricated, ovate-oblong, obtuse, pubescent, 3–5-nerved; receptacle 5-flowered; akene (very immature) short, pubescent; lower third of corolla abruptly much contracted, strongly pubescent, the upper portion cylindraceous, yellowish, with very short erect lobes.

Vic. Cochabamba, 1891 (1113).

Near *E. laeve*.

Willoughbya cordifolia (L.) Kuntze, Rev. Gen. Pl. 372. Between Guanai and Tipuani, Apr.–June, 1892 (1497).

Willoughbya hirsutissima (DC.) Kuntze, Rev. Gen. Pl. 372. Between Guanai and Tipuani, Apr.–June, 1892 (1331).

Willoughbya psilostachya (DC.) Kuntze, Rev. Gen. Pl. 372, in syn. Between Tipuani and Guanai, Dec. 1892 (1730) = Rusby's 1701, 1702 and 1703.

Willoughbya scandens (L.) Kuntze, Rev. Gen. Pl. 372. Espirito Santo, 1891 (1267.) A form near var. *barbinervia*.

WILLOUGHBYA DIOSCOREOIDES sp. n.

Branches stout, purplish brown, finely and sharply many-angled, glabrous; petioles (only two seen) 4 cm. long, dark purple, verrucose, the blades 2 dm. long, 1.5 dm. broad, ovate with beautifully rounded base, abrupt apical acumination 1–2 cm. long, and entire slightly revolute margin, coriaceous, glabrous both sides, very pale above and brownish beneath, 5-ribbed from near the base, the lower pair of ribs less stout, soon marginal, a trace of a third pair at the margin of the base, the veins obscure above, rather prominently reticulate beneath; panicle of indefinite size, in my specimen 6 dm. long including the long peduncle, very loose and open, its lower branches 1 dm. apart, the latter at the base laterally keeled and abruptly upwardly and downwardly dilated, the lower dilation adnate to the petiole of the floral leaf, the upper to the parent branch; floral leaves small, on broad connate ferruginous-tomentose petioles; branchlets of the inflorescence ferruginous, subtended by subulate bracts; heads sessile and solitary in loose interrupted spikes about 3 cm. long, subtended by subulate bractlets nearly half their length, 2.5 mm. long, 1 mm. broad, pear-shaped in the bud, campanulate when expanded, the pappus and corolla scarcely equalling the involucre; scales oblong, obtuse, chartaceous, light brown, 3-costate; akene blackish, with minute whitish costae, stout, oblong-obovoid, nearly half the length of the corolla; pappus copious, white, coarse; corolla-tube proper about one-half the length of the upper portion.

Vic. Cochabamba, 1891 (1256).

Species very near *W. Bangii* Rusby, but differing particularly in the form of involucre and its scale-characters and the relative length of the flowers.

WILLOUGHBYA FERRUGINEA sp. n.

Climbing, stems sharply many-sulcate, and like the petioles and principal veins on the underside, densely hirsute with ferru-

ginous hairs; branchlets articulated by an enlarged terete base; petioles 1–1.5 cm. long, broad, their bases much dilated, connate; blades 7–10 cm. long, 3–5 cm. broad very near the base, somewhat inequilateral, ovate with regularly tapering acutish apex, sub-cordate base and entire margin, bright green, above glabrous, with obscure veins, underneath ferruginous with prominent veins, the primary only 3 pairs, with many faint intermediate ones; peduncles of the axillary panicles approximately as long as the floriferous portion, which is 7–12 cm. long, 5–7 cm. broad, pyramidal, moderately dense, lanceolate-bracted; heads 3–5, 8 mm. long, sessile and crowded at the ends of slender branchlets slightly longer than themselves, subtended by broadly ovate serrate branchlets about two fifths as long as the involucre; involucre 6 mm. long, the scales oblong-oblanceolate, the apex rounded and ciliate, finely 5-nerved, with scarious margins, nearly glabrous; akenes black with very fine whitish angles, 3.5 mm. long, little tapering at the base; pappus 3.5 mm. long, copious, tawny, the serration scarcely perceptible; corolla-tube blackish, 1.25 mm. long, from an abruptly dilated base, very narrow, the limb 2 mm. long, broadly campanulate, the lobes 1 mm. long, broadly ovate.

Between Guanai and Tipuani, Apr.–June, 1892 (1419). The same as Jameson's 5095. Very near *W. Pohliana*, but that has a glabrous stem.

Willoughbya longiacuminata sp. n.

Branches stoutish, finely many sulcate, and, like the branchlets, petioles and veins on lower surface ferruginous-tomentellate; petioles 1–2 cm. long, broadly margined, at the base slightly dilated and connate; blades 7–12 cm. long, 2.5–4 cm. broad near the base, ovate with rounded base, regularly long-acuminate and very acute apex, and entire margin, minutely ferruginous both sides, thickish, bearing three pairs of rib-like primaries from the lower fourth, the upper primaries mostly obscure, angularly reticulate with the former and with one another, the veins slightly impressed above and prominent underneath; panicles solitary in the axils, the lower shorter, the upper much longer than their leaves, pyramidal, somewhat loose, lanceolate-bracted, the peduncles one-half as long as the floriferous portion, the heads at length crowded, sub-sessile, 4 mm. long and one-half as broad, subtended by a bract 1 mm. long and broad; involucral scales obovate, cartilaginous, whitish with green middle portion, finely many-nerved, the terminal portion thin, fimbrillate, tending to become recurved or spreading, the shorter pair about equalling the flowers; akene .5 mm. long, more than one-half as broad, very hairy; pappus 2.5 mm. long, coarse, tawny, equalling the corolla.

Mapiri, July–Aug., 1892 (1504).

Near *W. laevis*. Nearly the same as a specimen collected by Holton (no. 344), but in that the pappus much exceeds the involucre.

GRINDELIA BOLIVIANA sp. n.

Glabrous, very pale or glaucous, erect or ascending, 4 dm. high, or more, freely branching from the base upward, the branches erect, and like the stems irregularly and roughly angled; leaves 5–8 cm. long, 1.5–2 cm. broad, lance-oblong from a broad clasping and slightly decurrent base, with acute and mostly pungent apex and coarsely, strongly pungently serrate margin, midrib prominent, the veins obscure, very finely and very strongly reticulate; heads terminal, solitary, nearly 2 cm. long; involucre a little more than 1 cm. long, nearly 2 cm. broad, hemispherical-cupulate, the margin little if at all contracted; scales very loosely imbricated, the outer linear, wholly herbaceous, thick, drooping or loosely spreading, the inner lanceolate, middle and upper portions green, the latter loosely spreading; rays about twice the length of the involucre, one-third longer than the disk, deep yellow, oblanceolate, strongly 8–10-nerved, slightly notched; akenes (of the disk) 2 mm. long, 1 mm. broad, strongly compressed, the margins dilated; awns mostly 5, 6 mm. long, acicular, pungent; corolla 5.5 mm. long; appendages of the style triangular.

Vic. Cochabamba, 1891 (1055).

Near *G. pulchella* Dunal.

Laestadia Lechleri Wedd. Chlor. And. 1: 184. Vic. Mapiri, 12,000 ft., Sept., 1892 (1576) = Rusby's 2667.

Erigeron hieracioides Wedd. Chlor. And. 1: 194. Espirito Santo, 1891 (1219) = Rusby's 2716 and 2717.

Baccharis trimera DC. Prod. 5: 425. Vic. Sorata, 1892 (1313) = 692, and Rusby's 1564.

Baccharis trinervia (Lam.) Pers. Syn. 2: 423. Espirito Santo, 1891 (1202). An extreme form, with ovate acuminate leaves.

BACCHARIS DEBILIS sp. n.

Herbaceous, glabrous, the stems erect, very slender, 5 dm. high, or more, with 3–5 strong angles and twice as many secondary ones, the branches similar, strongly ascending; petioles 3–7 mm. long; blades 5–15 cm. long, .7–2.5 cm. broad, lance-ovate, with acute base gradually contracted into the petiole, long regularly acuminate and acute apex, and lightly sinuate, shortly ciliate margin, thin but rigid, dark green, 3-nerved, the midrib lightly impressed above, prominent beneath, veins moderately prominent beneath, reticulate; cymes few and small, loose with few heads,

linear-bracted, the peduncles 3–10 mm. long; heads small, the involucres broadly hemispherical-campanulate, 2 mm. long, 3 mm, broad, the scales in 2–4 series, few, loosely imbricate, lanceolate, acute, white, with lacerate margin and green midrib; receptacle convex, strongly foveolate. *Pistillate flowers:* akene hispid, .75 mm. long; pappus 2 mm. long, slender, rather sparse; corolla 2 mm. long; style-branches .3 mm. long, erect, linear, acute. *Sterile flowers:* akene wanting; pappus similar to last, but more serrate, 2 mm. long; corolla 2 mm. long, broadly campanulate, deeply lobed; style not exserted (but the flowers are not yet fully developed).

Between Guanai and Tipuani, April–June, 1892 (1457).

Species near *B. salicifolia*, but the heads are broader and the leaves more acuminate.

Baccharis Mapirensis sp. n.

Fruticose or suffruticose, sub-glabrous, much branched, the branches somewhat flexuous, greenish, sharply and irregularly 4–5-angled, the branchlets short, divergent; petioles 1–5 mm. long, margined; leaves 3–7 cm. long, 1–2.5 cm. broad, lanceolate, with sub-rotund base, acuminate acute apex and entire margin, slightly thickish, very minutely and sparingly pulverulent beneath, the midrib lightly impressed above and prominent beneath, the veins rather obscure, primaries 6–10 pairs, intercommunicating some distance from the margin; floral leaves successively smaller; inflorescence loosely and irregularly paniculate-cymose, the branches very strongly angled, the bracts lanceolate-subulate, thickish; heads on slender peduncles mostly equalling their own length, 5 mm. long, 7 or 8 mm. broad in full flower, tawny; involucre campanulate-hemispherical, 3 mm. long, 4 mm. broad, the scales in 2 or 3 series, imbricate, closely appressed, lance-ovate, obtuse or obtusish, middle portion green, margins broad, white, ciliate; receptacle convex, foveolate, the margins of the pits fimbrillate; hermaphrodite sterile flowers only seen; akene none, pappus very scanty; corolla-tube 1 mm. long, limb 2 mm. long, its lobes 1 mm. long, narrow; essential organs much exserted, erect; style-branches projecting nearly 1 mm. beyond the anthers, 1 mm. long, connivent, subulate.

Between Mapiri and Tipuani, July–Aug., 1892 (1481).

Baccharis oblanceolata sp. n.

Fruticose or arborescent, glabrous, except the puberulent inflorescence; branches stout, leafy, grayish or reddish-brown, angled above, little branched; leaves scarcely petioled, 6–10 cm. long, 2–3 cm. broad, oblanceolate, with acute base, abruptly short-acuminate and acute apex and entire margin, slightly inequilateral, thick-

ish, above dark green, below pale and minutely black-dotted, the midrib rather prominent on both sides, veins obscure both sides, the primary about 8–10 irregular pairs; panicles 1–1.5 dm. long, 1.5–2 dm. broad, loose, the branches nearly divaricate, the lower branches subtended by foliage leaves, the branchlets by small and delicate subulate bracts; heads strongly divergent, on peduncles 2–6 mm. long; heads 4–5 mm. long, 5–6 mm. broad, tawny; involucre campanulate-hemispherical to broader, two-thirds the length of the head, the scales few, in two series, broadly ovate, obtuse, the middle green, the margins white and fimbriate; receptacle conico-hemispherical, brown, strongly foveolate; sterile flowers only seen; akene (in flower) very small, pappus sparse, 1-serialled, white, the apex slightly recurved, not thickened; corolla tube brown, 1 mm. long, the limb campanulate, 1.5 mm. long, yellowish, the lance-ovate lobes nearly 1 mm. long; anthers truncate or slightly emarginate at the base, with small triangular apical appendages; style-branches erect, broadly triangular, the apex of style recurved-exserted.

Mapiri, July–Aug, 1892 (1490). Very near *B. brachaelnoides*, but differs in the maculate leaves, of different form and nervation.

FACELIS CAPILLARIS sp. n.

A tomentose annual; stems 4–6 cm. high, very slender, reddish; leaves opposite, sessile, .5–1.5 cm. long, about 1 mm. wide when flattened out, linear or a little broader upward, acute, strongly revolute, the margins and midrib of a deeper green; heads axillary and terminal, only 2 or 3 mm. broad, the involucre lance-ovoid, the scales few, unequal, the longest about 5 mm. long, ovate, acutish or obtuse, the very hyaline margins as broad as the green middle portion; flowers apparently all fertile, about 5; akenes comparatively large, 1 mm. long, oval, light brown, their hairs developing a dense mass of mucilage when wetted; pappus fine, very slightly plumose, 4 mm. long; corolla 2 mm. long, very slenderly cylindrical, white, with brown contracted apex.

Vic. Cochabamba, 1891 (1144). A satisfactory dissection is difficult owing to the mass of mucilage which is developed.

GNAPHALIUM VERSATILE sp. n.

Root vertical, stout, woody; stems numerous, tufted, erect or ascending, slender, simple, 2–4 dm. high; indumentum fine, close, white, uniform throughout; leaves numerous, erect, mostly secund, sessile, 5–10 mm. long, 1–2 mm. broad, subulate, thickish; inflorescence capitate, globular or broader, 2–3 cm. broad, dense; heads 5 mm. long, somewhat broader, the pappus about equalling the campanulate involucre; scales uniformly whitish to light-brown, except the lower third which bears a bright green central stripe,

scarious, oblanceolate to obovate, obtuse or acutish, minutely and faintly many-nerved.

Near snow-line, Mt. Tunari, 1891 (1035). Also collected by Pearce at Pelechuco.

Clibadium Surinamense L. Mant. 2: 294. Espirito Santo, 1891 (1203) = Matthew's 1736 from Peru. This I believe to be one of several distinct species included under this name; but for the present I follow the Fl. Bras., and place it here.

Polymnia edulis Wedd. Ann. Sci. Nat. (IV.) 7: (1857) 114. Espirito Santo, 1891 (1229).

Acanthospermum hispidum (Less.) DC. Prod. 5: 522. Between Guanai and Tipuani, Apr.–June, 1892 (1445).

Acanthospermum humile (Less.) DC. Prod. 5: 522. Turedon, 1891 (1137).

Zexmenia, sp.? It appears probable that a new genus will have to be established for this species which, besides being rayless, has an involucre quite different from that of any known species of *Zexmenia*. For this reason I prefer not to assign it a specific name under this genus. At the same time, the unsettled state of the literature of this section of the Compositae forbids my proposing a new generic name.

Between Guanai and Tipuani, April–June, 1892 (1340).

Verbesina australis (Hook.) Baker in Mart. Fl. Bras. 6: Part 3, 215. A little below Cochabamba, 1891 (1003). Also collected by Pearce at Tarija, Bolivia.

VERBESINA CINEREA sp. n.

Cinereous and scabrous throughout; stems erect, stout, flexuous, 5 dm. high or more; leaves alternate, on very short stout petioles, or the upper sessile, 5–15 cm. long, 2–5 cm. broad, lanceolate to ovate, base mostly rounded, apex acutely pointed, coarsely and sharply serrate, strigose, coarsely veined, the midrib prominent both sides; heads stoutly peduncled, sub-globose, 1.5–2 cm. long; involucre sub-hemispherical, 1 cm. long, the scales in about 3 series, the outer shorter, oblong, obtuse or acute, thick and rigid, appressed, dark gray with very narrow light margins; receptacle convex; chaff enclosing the akene, hirsute and black above; akene black, 7 mm. long, 4 mm. broad exclusive of the narrow wing which is above broader and ciliate or lacerate; pappus of 2 rigid bristles 5 mm. in length, hispid; corolla-tube proper 2 mm. long, densely villous, the upper half abruptly con-

tracted, the limb 5 mm. long, cylindrical; style-branches of the disk flowers lightly villous toward the summit.

Below Cochabamba, 1891 (1092).

Salmea mikanioides Britton, Bull. Torr. Bot. Club, 19: 150. Mapiri, July–Aug., 1892 (1486). The same as Rusby's no. 1739.

Cosmos diversifolius Otto in Knowles & Westc. Fl. Cab. 2: 8. *pl. 47.* Near snow-line, Mt. Tunari, 1891 (1021). Vic. Sorata, May, 1892 (1302).

Bidens rubifolius H. B. K. Nov. Gen. 4: 237. *pl. 381.* Between Guanai and Tipuani, Apr.–June, 1892 (1406). The flowers are smaller and more deeply colored than in the type.

Galinsoga calva Rusby, Mem. Torr. Bot. Club, 3: Part 3, 61. Vic. Cochabamba (1148).

Calea robusta Britton, Bull. Torr. Bot. Club, 19: 151. Between Guanai and Tipuani, Apr.–June, 1892 (1423) = 429.

Porophyllum oblanceolatum sp. n.

Glabrous, the base fruticose; flexuous, the elongated branches sub-erect, slender, green or purplish, irregularly costate; leaves sparse, 2–4 cm. long, 3–5 mm. broad, oblanceolate, tapering into an elongated petiole-like base, the apex blunt, entire; fleshy, pale green or some with purple midrib and narrow purple margin; floral leaves linear; heads solitary at the ends of elongated slender naked peduncles, which are abruptly dilated at the apex, 1.5 cm. long; involucre campanulate, 1.2 cm. long; the scales 5, free, green-purple with scarious imbricated margins, oblanceolate to obovate, blunt; akenes 5.5 mm. long, slenderly oblanceolate, black, angled, sparsely hispidulous; pappus unequal, 7 mm. long, distinct, white, slightly serrate; straight portion of corolla-tube 5 mm. long, the base abruptly dilated, the gradually dilated upper portion abruptly recurved, the lobes about 1 mm. long, ovate, acutely pointed, strongly spreading; essential organs exserted, conspicuous, deep purple.

Below Cochabamba, 1901 (1013). Species near *P. longifolium.*

Schkuhria abrotanoides Roth, Cat. 1: 116. Vic. Sorata, March, 1892 (1298) = 755.

Tagetes Mandoni Sch. Bip. Bull. Soc. Bot. France, 12: 79. Name only.

Stoutish, erect, 5 dm. high or more, very leafy, glabrous; leaves 5–10 cm. long, on very short petioles or with one or two reduced linear leaflets at the insertion, obovate; leaflets mostly 6½ pairs, the terminal largest, 3–7 cm. long, by 1–2 cm. broad, the

lower successively smaller, oblong, acute at both ends, incisely serrate, decurrent upon the rhachis, dark green above, yellowish-green and blackish glandular, with stout and prominent midrib beneath; inflorescence mostly compact, the heads 1.5 cm. long, 4–5 mm. broad, short-peduncled; involucre oblong-obovoid, the glands few, brownish, elongated, the teeth broadly ovate to semicircular and very slightly spreading; ray-corollas bright yellow, conspicuous, the tubular 6–7 mm. long, narrowly funnelform, blue-black; akenes 6 mm. long, very slender, sharply angled, minutely papillose; pappus 3 mm. long.

Near snow-line, Mt. Tunari, 1891 (1111). Same as Rusby's 1641.

Liabum hastifolium Poepp. & Endl. Nov. Gen. et Sp. 3: 43. Mapiri, July–Aug., 1892 (1475) = Rusby's 1742.

Liabum Rusbyi Britton, Bull. Torr. Bot. Club, 19: 263. Espirito Santo, 1891 (1195). Near Mapiri, 10,000 ft. Sept., 1892 (1581). The latter has smaller leaves than the type, less pointed and more oblong or oblanceolate.

Liabum ovatum (A. Gray) Britton, Bull. Torr. Bot. Club, 19: 263. (*L. uniflorum* Ball, Journ. Linn. Soc. 22: [1885] 46). Near snow-line, Mt. Tunari, 1891 (1045) = Rusby's 1633.

Senecio Sprucei Britton, Bull. Torr. Bot. Club, 19: 265. Mapiri, July–Aug., 1892 (1513) = Rusby's 1695.

Senecio Yungasensis Britton, Bull. Torr. Bot. Club, 19: 264. Mapiri, July–Aug., 1892 (1538) = Rusby's 1719.

Senecio culcitroides Wedd. Chlor. And. 1: 103. Espirito Santo, 1891 (1240) = Rusby's 1692.

SENECIO SINAPOIDES sp. n.

Stem tall, coarse, widely branching, angled, light green, the younger parts thinly floccose; lower leaves 1–2 dm. long or more, 5–8 cm. broad, ovate, tapering into a narrowly winged petiole, coarsely dentate with sharp teeth and rounded sinuses, or toward the base lobed to pinnatifid, a pair of linear stipuloid pinnae at the insertion, very thin, pale; the upper lanceolate, less toothed or entire, floccose underneath; inflorescence rather sparse, loosely paniculate; heads 1 cm. long and broad, on peduncles nearly as long; involucre 7 mm. long, short-campanulate from a broad truncate connate base, the scales linear-lanceolate, almost regularly tapering from the base to the acute blackish tip, the midrib darker; at the base of the involucre and upon the peduncles several bracts resembling those of the involucre but smaller; receptacle 2.5 mm. broad, plane, rugose or shallowly foveolate; akenes light brown,

stellate-scurfy, compressed, finely many-nerved, nearly 3 mm. long, oblong-lanceolate; pappus copious, white, fine, minutely scabrous; rays spreading, strongly 5-nerved; disk-corollas 6 mm. long, slender, gradually and slightly broadened upward; base of anthers obtuse, entire; style-branches truncate or sub-rounded.

Turedon, 1891 (1135) near *S. Sepium.*

Senecio rhizomatus sp. n.

From a horizontal terete rhizome; hispidulous; stem erect, 1–2 dm. high, purple; basal leaves on broad petioles nearly of their own length, the blade 3–6 cm. long, 1–2.5 cm. broad, ovate, cordate or rounded at the base, blunt, irregularly and coarsely sinuate-dentate, probably becoming lobed, thickish, at first erect; the cauline similar but lance-linear, clasping, tapering from the base to an acutish tip, more or less purplish; heads several at the summit, cernuous, about 2 cm. long and 3 cm. broad; involucre distinctly 2-serialled, nearly 2 cm. long, the scales rather lax, purplish with lighter margins, ferruginous-hairy, ovate, acutish, nearly equalling the pappus; rays not apparent; disk-corollas 1 cm. long, the tube proper green, slender, slightly dilated upward, nearly as long as the limb, into which it is abruptly expanded and which is gradually dilated to the summit; anther-bases minutely produced; style-branches abruptly terminating in a discoid dilation; mature akenes not seen.

Near snow-line, Mt. Tunari, 1891 (1050). Apparently the same is (1046) from the same locality. In herb. Kew as *S. croceus* Wedd., apparently a Ms. name and antedated by *S. croceus* (Tratt.) DC.

Senecio psidiifolius sp. n.

Apparently scandent, glabrous except the puberulent peduncles; branches brownish, finely costate; petioles 1–2 cm. long, stout; blades 5–10 cm. long, 4–6 cm. broad, oval, the base sub-rotund and slightly inequilateral, the apex blunt but minutely cuspidate; entire, finely revolute, thick and rigid, pale green, veins finely reticulate, somewhat prominent beneath, the primaries 8–10 pairs, very crooked and irregular; panicles long, lax, interrupted, the heads 2 cm. broad, in rather dense glomerate or broadly ovoid clusters at the ends of the branchlets; heads on very short subulate or linear-bracted peduncles, 7 mm. long; involucres 4 mm. long, short-campanulate, their basal bracts wanting or rudimentary; scales in a single series, oblong, rigid, obtuse, yellow with brownish middle portion; receptacle plane, sparsely but deeply foveolate; rays few, conspicuous, bright yellow; tubular corollas 5 mm. long, gradually dilated upward, the lobes strongly spreading or recurved; anther-bases strongly mucronate; style-

branches truncate and somewhat enlarged at the tip; akenes short, obovoid, mature ones not seen.

Mapiri, July–Aug., 1892 (1532). Near *S. prunifolius* and *S. Sprucei.*

GYNOXIS MANDONI Sch. Bip. Bull. Soc. Bot. France 12: 86. Name only.

Scandent, the branches weak and slender, finely tomentellate, gray, or on the new growth yellow, angled; petioles 1.5–3 cm. long, stout; blades 6–10 cm. long, 2–4 cm. broad, lanceolate to ovate, base rounded, apex regularly tapering to an acute tip, margin entire or obsoletely toothed, thickish; above bright green, glabrous or sparingly and minutely strigose, underneath tomentellate or glabrate, grayish or yellowish green, the veins slender but prominent, the primaries 12–15 irregular pairs; inflorescence lax, corymbose or broadly paniculate, gray-tomentose, linear-bracted; heads pedunculate, about 1.2 cm. long, campanulate; involucre 8 mm. long, linear-bracted; scales oval-oblong, obtuse; receptacle very small, plane, foveolate; rays narrow, strongly nerved; disk-corollas 7 mm. long, gradually dilated upward; pappus-bristles slightly thickened at the tips.

Espirito Santo, 1891 (1196). The same as Mandon's 84, though less tomentose. Not the same as Linden's 903 and 954, which I take to be *G. pendula.*

GYNOXIS ALTERNIFOLIA Sch. Bip. Linnaea, 34: (1865-66) 531. Name only.

Scandent, the branches stout, crooked, tomentellate, light gray, toward the summit ferruginous; petioles alternate, 2–4 cm. long, stout, fleshy; blades 1–2 dm. long, 3–6 cm. broad, ovate-oblong, base slightly cordate, apex mucronate, margin coarsely and shallowly sinuate, perhaps several mucronate teeth toward the apex; thick and fleshy, above glabrous and very finely reticulate, the midrib slightly impressed, underneath ferruginous or gray tomentose, the veins prominent; inflorescence corymbose, ample, dense, linear-bracted, strongly ferruginous; heads pedunculed, 1 cm. long, narrowly campanulate; involucre 6 mm. long, a few linear-subulate bracts at the base similar to those upon the peduncle; scales few, in 2 series, the outer narrower, linear-oblong; receptacle very small, slightly convex, foveolate; rays conspicuous, reflexed, bright yellow, oblong-oval, strongly 5-nerved; disk-corollas 7 mm. long, gradually dilated upward, the lobes nearly 2 mm. long, spreading; anthers early separate, not produced at base; style-branches dilated and hairy at apex; akenes naked, angled, obovoid; pappus white, in a single circle, slightly coherent at the base.

Vic. Mapiri, 8000 ft. Sept., 1892 (1574). Same as Mandon's 131.

GYNOXIS GLABRIUSCULA sp. n.

Branches blackish or dark brown, at first white-tomentose, but early glabrate, dilated at the nodes; petioles 1.5–3 cm. long, stoutish; blades 4–8 cm. long, 2–4 cm. broad, ovate, the base mostly rounded, tapering regularly to an obtusish or acute point, the margin distantly and minutely toothed; thickish, glabrous both sides, reticulate with inconspicuous veins; inflorescence open, corymbose, white-tomentose, sparingly leafy-bracted; heads short-peduncled, 1.5 cm. long and broad, campanulate; scales 8 mm. long, broadly oval, blunt, purple upward, thick, appressed; receptacle slightly convex, foveolate; rays elongated, oblong, sharply 3-toothed; disk-corollas 1 cm. long, gradually dilated upward, slightly exceeding the pappus, which is in one circle, scabrous, acute; akene 2 mm. long, obovoid, compressed, angled (mature ones not seen); essential organs not mature.

Near snow-line, Mt. Tunari, 1891 (1116). The same as a specimen collected in Bolivia by Bridges.

Werneria villosa A. Gray, Proc. Am. Ac. 5: (1861) 139. Espirito Santo, 1891 (1220). Same collected in Peru by the Wilkes Expl. Exp., but Mandon's 86 and 87 and Lechler's 2111 are apparently distinct.

MUTISIA BIPONTINA Mandon, Bull. Soc. Bot. France, 12: 79. Name only.

A cirrhiferous climber; branches stoutish, coarsely angled, narrowly and thinly winged by the decurrent leaves, yellow-tomentose; leaves sessile, decurrent, terminating in a branched tendril; leaflets 4–7 pairs, imperfectly opposite, their internodes 1.5–2 cm. long; sessile, 4–7 cm. long, 1–3 cm. broad, inequilaterally ovate, the base oblique, rounded or sub-cordate, the apex mucronate, entire, flaccid, above very dark and minutely tomentellate, underneath ferruginous-tomentose, the venation obscure; peduncles very stout, coarsely angled and, like the involucre, ferruginous-tomentose; involucre broadly and irregularly campanulate, the scales spreading or reflexed, about 4 cm. long, linear, tapering regularly from the base to the acute apex; rays deep crimson, glabrous, about 7 or 8 cm. long; disk-corollas 4 cm. long, exceeding the coarse straw-colored pappus about 5 mm.; style-branches long-exserted, slender, slightly clavate.

Espirito Santo, 1891 (1253) = Mandon's no. 6 and Rusby's 1549.

Barnadesia venosa sp. n.

Branches stout, the younger parts puberulent; leaves 8–16 cm. long, 2–4 cm. broad, inequilaterally oblanceolate, tapering into a petiole 5–8 mm. long, with acutely pointed apex, entire, finely reticulate, above dark-green and glabrous, with the veins obscure, underneath very pale or slightly yellowish, the veins prominent, the midrib and 5–8 pairs of strongly ascending and incurved primaries sparingly hairy; branchlets bearing 5–10 loosely corymbed heads, on slender peduncles 1–2 cm. long; involucre campanulate-turbinate; outer scales broadly ovate, thick, with recurved apices, the inner successively longer (becoming 3 cm. long and linear, erect, thick and rigid), sericeous, narrowly scarious-margined and minutely spine-tipped; receptacle slightly concave, with a peripheral circle of large fimbriate-margined foveolae; ray-flowers 8, fertile, the akenes 4 mm. long, densely pilose, dorso-ventrally sigmoid-curved, with very obliquely truncate base, 5-ribbed; the pappus subequal, 1.5 cm. long, 1-serialled, purple, white-plumose, connate at the white base, acute; the corolla bright purple, long-pilose, its tube 2 cm. long, narrowly cylindrical, 5-angled, the filiform lip 1.5 cm. long, entire, the other 2.5 cm. long, 5 mm. broad, oblanceolate, 4-toothed, the teeth 2 mm. long, ovate, acute; the androecium completely tubular, very long-pilose within, equalling the corolla, the anthers 8 mm. long, narrowly linear, not caudate, the appendages 2 mm. long, broader than the anther, obtuse, white with purple midrib, the style reaching to the base of the anther-appendages, cylindrical, of uniform thickness or very slightly thickened upward, glabrous, the branches 1.5 mm. long, 1 mm. broad, flattened, oval, with rounded apex twice the breadth of the style; disk-flower one, neutral, its akene-vestige 2 mm. long and broad, cylindrical, straight with truncate base, densely pilose; pappus bristles equal, 1.25 cm. long, 1-serialled, connate at the base, which is produced downward into a beautifully crenated border, the lower half yellowish white, the upper purple, minutely puberulent, aristiform, rigid, acute, about 25 in number, becoming recurved, the corolla purple, densely pilose, cylindrical, nearly uniform, 2 cm. long, 3 mm. broad, the lobes 2 mm. long, ovate, acute, the base truncate and produced downward into a slight entire acute annulus; style a mere vestige.

Espirito Santo, 1891 (1265). Also collected by Pearce at Muña, 7000–8000 ft.

Plazia daphnoides Wedd. Chlor. And. 1: 12. *pl. 2.* Vic. Cochabamba, 1891 (1147).

Seris (Onoseris) sagittatus sp. n.

Plant 5–10 dm. high or more, the stem and lower leaf-surfaces

densely and closely white-floccose, the peduncles glabrate; petioles 1–2 dm. long, strongly winged, the wings slightly amplexicaul; blades from 6 cm. long by 3 cm. broad to 15 cm. long and broad, triangular-hastate, apex from very acute to obtuse or mucronate, the margin coarsely and irregularly dentate, the sinuses broad, shallow, rounded, the teeth mucronate and salient, upper surface green and glabrous, the veins sparse, whitish, slender, slightly prominent, underneath very prominent, very thin; peduncles sparingly branched, 3–10 dm. long, sharply angled, subulate-bracted, the branches elongated, slender, erect; heads 3–4 cm. long and (as pressed) equally broad, the involucre campanulate, equalling the pappus, the scales imbricated and appressed in many series, the outer successively and regularly shorter, linear, acutish, bright green with 2 darker green stripes, and with white and floccose margins and purplish tips; corollas rose-purple, exceeding the moderately tawny pappus by 1 cm., the pappus at most 1.5 cm. long; akene about 9 mm. long, very strongly and coarsely angled, greenish gray with a rather coarse pubescence.

In dry gravelly or clayey soil, Turedon, vic. Cochabamba, 1891, (1139). Near Pearce's 630, but that has strictly 1-headed peduncles, less floccose and less sagittate leaves.

Perezia pinnatifida (H. & B.) Hook. et Arn. Com. 1: 34. Espirito Santo, 1891 (1217).

Perezia pungens (H. & B.) Less. Linnaea 5: 20 (1830). Var. (?) CERNUA var. nov. Differs from the type in its less broad, cernuous heads, the purple involucral scales broader, with more rounded and more mucronate apex, the midrib less spinescent.

This puzzling form presents some characters strikingly different from those of the type, but I cannot establish specific distinctions. It varies from 1 dm. in height, with solitary heads and basal leaves 8 cm. in length, to 7 dm. in height or more with basal leaves more than 3 dm. in length and 5 to 8 racemosely arranged heads. The leaves are oblanceolate, more or less coarsely sinuately and rather deeply and pungently toothed. The heads are cernuous, 2 cm. long, as broad or broader, with broad, mostly deep purple involucral scales, and a deeply tawny pappus.

Near snow-line, Mt. Tunari, 1891 (1049). The larger form of it from Espirito Santo, 1891 (1218).

PEREZIA FOLIOSA sp. n.

Roots numerous, elongated, fleshy but slender, with few branches; stems several, 3–5 dm. long, weak, ascending, above erect-branched, green or purplish, hispidulous, coarsely angled above; basal leaves numerous, 2 dm. or more in length, oblong to oblanceolate, narrowed into a winged petiole, acute or acutish, the margin thickly beset with unequal small pungent divaricate teeth, bright green, thin, wrinkled, scabrous, especially beneath, the midrib only conspicuous; cauline leaves numerous, ovate, strongly amplexicaul by a broad base, acute, otherwise similar to the basal; heads cymose on few elongated erect branches, 2 cm. long, (exclusive of the corolla) 1.5 cm. broad; scales nearly equalling the pappus, about 10 in number, besides 2 or 3 more leaflike ones at the base, imbricated, rather unequal, appressed, lanceolate, strongly and pungently pointed, green, with a slight keel and scarious margins, except at the summit, where they are spiny-toothed; akene black, obovoid, compressed, the faces lightly keeled, sparsely appressed-sericeous, 4 mm. long by 1.5 mm. broad; pappus copious, coarse, tawny, somewhat unequal, 1.3 cm. long, very minutely roughened; corollas apparently light purple, exceeding the pappus by 6 or 7 mm.; essential organs conspicuous, blue-black.

Turedon, 1891 (1131).

Trixis divaricata (H. B. K.) Spreng. Syst. 3: 501. Mapiri, July–Aug., 1892 (1493) = Rusby's 1699.

TRIXIS AGGREGATA sp. n.

Apparently herbaceous with tufted stems, 5 dm. high or more, the branches erect, stout, originating near the base, simple, green, finely costate, roughish, pubescent, leafy; leaves erect, sessile, 5–7 cm. long, 1–1.5 cm. broad, acute at both ends, with irregular minute sharply salient teeth, bright green, strigose-hairy, very sparsely above, the midrib stout, whitish, the primaries irregularly 10–12 paired, crooked, articulating toward the margin; corymbs nearly 1 dm. broad, the divisions about 4 cm. broad, on peduncles 2 or 3 cm. long and bearing about 7 heads closely aggregated on short peduncles; heads 2 cm. long; involucres about 1 cm. long, campanulate, the principal scales about 8, in a single series, a few shorter ones outside, the longer oblanceolate, acutely pointed, bluntly keeled, puberulent; akenes linear-oblanceolate, 5 mm. long, densely hispid; pappus copious, slightly tawny, about 12 mm. long, minutely toothed; corollas slightly exceeding the pappus.

Vic. Cochabamba, 1891 (1150).

JUNGIA DIVARICATA sp. n.

Fruticose, size unknown, the branches spreading widely, the

branchlets divaricate, rigid, deep purple, puberulent; petioles 1–2 cm. long, stoutish, rigid, terete, purple and puberulent, conspicuously articulated with the stem, the insertion strongly nodose; blades 1.5–4 cm. long and nearly as broad, round-ovate, slightly cordate, with 2 or 3 pairs of triangular acute lobes extending nearly half way to the midrib and irregularly and sharply serrate-dentate, the sinuses of similar form; thick, rigid, strongly reticulate-veiny, above dark green and scabrous, underneath gray-green, pubescent, finely black-glandular; heads articulated to the summit of the branchlets, 1 cm. long and broad; involucre double, the outer reflexed, of several oblong foliaceous scales 3 mm. long by 1 mm. broad, the inner 7 mm. long, campanulate, the scales slightly imbricated, puberulent, appressed, rigid, in a single series, linear-oblong, boat-shaped, acutely pointed; pappus fine, white, one-third longer than the involucre and equally exceeded by the white corollas; akene lance-linear, light brown, densely hispid, 2.5 mm. long; pappus in a single circle, slightly exceeding the tube of the corolla, hispid.

Near snow-line, Mt. Tunari, 1891 (1115). Species near *J. rosea*

CAMPANULACEAE.

Siphocampylus volubilis (H. B. K.) Don, Gen. Syst. Gard. 3: 703. Vic. Guanai, Dec., 1892 (1593) = 256 and Rusby's 643 and 650; also collected by Pearce at Butero.

SIPHOCAMPYLUS AUREUS sp. n.

Glabrous; stems herbaceous, slender, weak, ascending; petioles .5–1 cm. long, broad, margined, purplish at the base; blades 6–12 cm. long, .5–1.5 cm. broad, lanceolate, with cuneate base and long-acuminate, acute apex, coarsely and irregularly short-serrate, very thin, pale, venation indistinct, the few primaries nearly erect; peduncles 4–6 cm. long, very slender, purple; calyx-tube campanulate, 5 mm. long (in flower), narrowly 10-costate, the lobes about 8 mm. long, linear, tapering from the base to an acute apex; corolla yellow, 5 cm. long or more, infundibular, slightly curved, gradually and regularly ventricose to double the diameter at the base, the upper portion fissured for about 1 cm.; lobes about 7 mm. long, lance-ovate, acute, 2 of them connate for more than half their length; anther-tube 5 mm. long, two anthers slightly tufted, the others nude; mature capsule not seen; when nearly mature tipped with the stout purple style.

Espirito Santo, 1891 (1234). Also collected by Bridges in Bolivia.

SIPHOCAMPYLUS RADIATUS sp. n.

Stem tall, stout, coarsely and irregularly angled, above slightly winged by the decurrent petioles and strongly nodose by the leaf-scars, slightly canescent; floral leaves only seen, sessile and lightly decurrent, 2–3 dm. long, 5–7 cm. wide, irregularly lanceolate, the apex long-tapering, the base less so, irregularly and sharply serrate with rather small cartilaginous, tipped teeth, thinly membranaceous, bright green, smooth both sides, strongly reticulate-veined, the veins impressed above, the midrib very strong and, like the 20–25 irregular pairs of principal veins, whitish and somewhat crooked; unfolding leaves whitish-tomentellate; pedicels solitary in the axils, about equalling their leaves, more or less ascending, stoutish from a much and abruptly contracted base, nearly terete, slightly dilated and compressed at the summit, sparsely puberulent; bud cernuous, becoming erect in anthesis and fruit; calyx-tube in flower nearly hemispherical, 12 mm. broad, in fruit one-half larger, with umbilicate base and contracted margin, strongly 10-ribbed; teeth herbaceous, erect, 2 cm. long, or more, lance-linear from a short broad base, strongly 1-nerved; corolla dull white or yellowish, tomentose within and without, sub-coriaceous, the tube, after drying, about 1 cm. broad, 1.5 cm. long, the limb 2.5 cm. long; seeds blackish, somewhat compressed, trapezoidal, .5 mm. long, white-dotted under a high power.

Vic Cochabamba, 1891 (1106).

Species near *S. giganteus* Britton.

SIPHOCAMPYLUS OBLONGIFOLIUS sp. n.

Glabrous, apparently climbing by tortuous petioles; branches elongated, simple, cylindrical, sharply wrinkled, light brown; petioles 5 mm. long, broad, margined; blade 6–12 cm. long, 2–4 cm. broad, oblong or slightly lance-oblong, with obtuse to sub-rotund base, acutish to acute brown-mucronate apex and a slightly sinuous margin, its teeth reduced to brown mucros similar to that of the apex; dark green, thick, the veins obscure above, underneath the 8–10 pairs of primaries prominent, like the midrib coarse, irregular, whitish; pedicels several in the axils, unequal in developing, those of the preceding season persisting with their calyx-ribs, at length 1.5 cm. long, dilated and angled at the apex and like the calyx papillose; calyx-tube turbinate, in flower 4 mm. broad and high, in fruit twice as large, the teeth 7 or 8 mm. long, subulate, soon spreading or reflexed; corolla deep purple, the tube cylindrical, 2.5 cm. long, 4 mm. broad, the limb 1.5 cm. long. Fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1461).

Very nearly the same as a specimen collected by Matthews (?), no. 185, Lima, Peru.

Lobelia nana H. B. K. Nov. Gen. 3: 317. *pl. 272.* Below Cochabamba, 1891 (1052) = Rusby's 1075. Vic. Sorata, Nov. 1892. (1622).

VACCINIACEAE.

Psammisia leucostoma Benth.; Meissn. in Mart. Fl. Bras. 7: 127. Mapiri, July–Aug., 1892 (1516).= Spruce's 2465.

Chupalon pubescens (H. B. K.) Kuntze. (See no. 290.) Between Guanai and Tipuani, Apr.–June, 1892 (1383). Leaves somewhat narrower than in no. 290.

ERICACEAE.

Befaria glauca H. et. B. Pl. Equin. 2: 118. *pl. 177.* Espirito Santo, 1891 (1167) = Rusby's 2010 and 2123.

Clethra Brasiliensis Cham. (See 393 and 474.) Between Guanai and Tipuani, Apr.–June, 1892 (1403).

MYRSINEAE.

Myrsine Gardneriana A. DC. Ann. Sci. Nat. (II.) 16: 86. Between Guanai and Tipuani, Apr.–June, 1892 (1422) = Rusby's 866 and 869.

Myrsine Guianensis (Aubl.) R. & S. Syst. Veg. 4: 509. (*Rapanea Guianensis* Aubl. Pl. Gui. 1: 121 [1775]). Between Guanai and Tipuani, Apr.–June, 1892 (1463) = Schomburghk's 695, Spruce's 3918 and Matthews' 1564.

MYRSINE VIRIDIS sp. n.

Glabrous; branchlets purple, slender, terete; petioles .5–1 cm. long, strongly channelled; blades 4–8 cm. long, 1.5–3 cm. wide, oblanceolate to obovate, mostly a little inequilateral, acutish at base and apex, entire, revolute, coriaceous, deep-green, pale beneath, the midrib lightly impressed above, very prominent underneath, the numerous primaries and veins very slender, crooked and inconspicuous; fascicles axillary and supra-axillary, about 8–10-flowered, the flowers very short-pedicelled, the pedicels sharply angled; only withered flowers seen; calyx whitish, 3 mm. broad, lobed two-thirds of the way to the base; corolla purple, coriaceous, lobed nearly to the base, the lobes 2 mm. long, oblong-ovate; style extremely short and stout, stigma large, peltate, lobed and apparently lightly fimbriate; fruit purple, 4 mm. broad.

Mapiri, July–Aug., 1892 (1476) = Fendler's 758 from Venezuela.

PECKIA PSYCHOTRIAEFOLIA sp. n.

Branchlets stout, terete and (like the peduncles, rhachis, pedicels, petioles and lower leaf-surfaces) beset with small purple scurfy glands; petioles about 1 cm. long, stout, subcarinate like the midrib; blades 1.5–2.5 dm. long, 6–9 cm. broad, obovate with cuneate base, the apex very abruptly contracted to a short broad blunt point, entire, membranaceous but rigid, dark-green, glabrous above, the 10–12 pairs of primaries slender, very prominent, abruptly arching upward to connect about 5 mm. from the margin; racemes simple, mostly solitary, erect-spreading, 1–1.5 dm. long, loosely flowered (or becoming loose) the rhachis angled, the subulate purple deciduous bracts nearly as long as the pedicels, which are 1 or 2 mm. long, very stout, horizontal or slightly deflexed; calyx- and corolla-lobes about 1.5 mm. long, oval, broadly imbricated, the corolla greenish and of firmer thicker texture than the persistent white calyx; stamens inserted below the middle of the corolla-lobes, the elliptical anthers nearly as broad as long; fruit (black?) depressed-globose, about 7 mm. broad, minutely tipped with the persistent style.

Between Tipuani and Guanai, Dec., 1892 (1651 in flower) = Rusby's 1218 (in fruit). Species near *P. nitida.*

EBENACEAE.

DIOSPYROS TETRAMERA sp. n.

Glabrous, the branchlets blackish, flexuous, the internodes about 2 cm. long; petioles 3 mm. long, nearly as broad, margined; blades 5–12 cm. long, 2–4 cm. broad, lance-oblong with acutish to sub-rotund base, slightly acuminate but very obtuse apex, and crumpled revolute margin, coriaceous, rigid, pale green, midrib impressed above, prominent and sharp beneath, the veins elevated both sides, reticulate, the primary very numerous; the 4-merous flowers solitary in the axils or several on an apparently axillary branchlet, subsessile, the calyx subtended by about 4 broadly ovate whitish cartilaginous bracts; calyx campanulate, 3 mm. broad, a little longer, very shallowly lobed, cartilaginous: corolla coriaceous, dark purple, in bud lanceolate and acute, in anthesis the campanulate tube 5 mm. longer than the calyx, the mouth 4 mm. broad, the strongly recurved lobes one-half as long the tube, nearly semi-circular; anthers 8, linear, slender, 2 mm. long, scarcely distinguishable from the blackish filaments which are a little more than one-half as long; pistil 7 mm. long, the ovary rudimentary; style stout. Pistillate flowers not seen.

Between Tipuani and Guanai, Dec., 1892 (1681).

APOCYNACEAE.

Thevetia. Species almost certainly undescribed, but must await the collecting of flowers. A little above Cochabamba, 1891 (1088).

Plumiera bracteata A. DC. Prod. 8: 394. Between Tipuani and Guanai, Dec., 1892 (1679).

Forsteronia Sellowii Muell. Arg. (See no. 850.) Between Tipuani and Guanai, Dec., 1892 (1689).

ODONTADENIA BOLIVIANA sp. n.

Glabrous, except the finely tomentellate inflorescence, including calyx and corolla; branchlets stoutish, terete, purple; petioles 1.5–2 cm. long, broad, margined; blades 1.5–2 dm. long, 6–10 cm. broad, oval with a short and broad point, coriaceous, the midrib strongly channelled above, prominent underneath, the 10 or 12 pairs of primaries strongly falcate, especially at the ends, where they connect with those above about 5 mm. from the margin; cymes axillary and terminal, the peduncles about 4 cm. long, stout, sulcate, obsoletely bracted below, several–many-flowered, the pedicels about 1 cm. long, stoutish; calyx about 6 mm. long and broad, coriaceous, divided nearly to the base, the lobes imbricated, rounded, minutely crenate-dentate; corolla yellow (?) about 5 cm. long to the base of the lobes, the tube proper 1–1.5 cm. long, strongly contracted at the summit, the throat 4 cm. long, infundibular, the broad lobes widely spreading, the limb 5 or 6 cm. broad.

Between Tipuani and Guanai, Dec., 1892 (1687).

MANDEVILLA BANGII sp. n.

Glabrous; branches stout for the genus, light reddish-brown, terete, the older portions verrucose, the internodes 5 or 6 cm. long; petioles 1.5–2 cm. long, rather slender; blades .5–1 dm. long, 2.5–5 cm. broad, ovate with cordate base and abruptly acuminate, then tapering, acute apex, membranaceous, pale underneath, the primaries 6–8 pairs, veins inconspicuously reticulate; raceme simple, several–many-flowered; calyx 2 cm. long, parted almost to the base, the lobes linear, tapering regularly from the base to the acute apex; corolla rose-purple, 4 or 5 cm. long, the tubes 2 cm. long, infundibular with narrower cylindrical lower part, the lobes spreading, oval-ovate with rounded apices, 2 cm. broad; anthers 8 mm. long, sessile, inserted at the summit of the contracted basal portion of the tube, adnate below the middle to the stigma, short-acuminate, the apex inflexed, the base short-sagittate, obtuse, or long-sagittate with the lobes adnate; style slender, the stigma 5 mm. long, 3 mm. broad, strongly

5-winged, the wings produced at the base, acutely beaked; disk short, white, fimbriate-divided; glands 5, short, slightly 2-lobed; ovary 3 or 4 mm. long, compressed, ovoid, green. Pedicels in fruit 2–2.5 cm. long, very stout; follicles 2.5–3 dm. long, continuous, terete, reddish, slightly falcate; seeds 1 cm. long, 3 mm. broad when flattened out, lance-oblong, strongly compressed and boat-shaped, keeled upon the concave surface, the keel extending from the apex two-thirds of the way to the base, the coma 2–2.5 cm. long, ample, tawny, shining.

Near snow-line, Mt. Tunari, 1891 (1120).

ASCLEPIADEAE.

Gothofreda Dombeyana (Decne.) Kuntze, Rev. Gen. Pl. 420 (?).

Between Guanai and Tipuani, April–June, 1892 (1395).

Although this plant appears to agree in every respect with the above, it is entirely lacking in the appendages to the pollinia which are characteristic of *Gothofreda*, and it may have to be removed from this genus.

Blepharodon mucronatum (Schlecht.) Decne. in DC. Prod. 8: 603.

Espirito Santo, 1891 (1275).

Ditassa ——? Probably new, but not to be determined without flowers. Between Tipuani and Guanai, Dec., 1892 (1711).

SCHISTOGYNE ATTENUATA sp. n.

Grayish-puberulent or the upper leaf-surfaces sub-glabrous; stems twining, slender, the internodes 1–1.5 dm. long; petioles 1.5–2 cm. long, rather stout; blades 5–8 cm. long, 3–4 cm. broad, ovate, with strongly cordate base, the sinus closed by the overlapping rounded lobes, and with long attenuate apex, thin, veins inconspicuous, or the 5 or 6 primaries slightly conspicuous beneath; peduncles 2.5–3 cm. long, stout, about 5-flowered, the pedicels setaceous-bracted, in flower about 1, in fruit 2 cm. long, more or less recurved; bud 5 mm. long, broadly ovoid, scarcely acuminate at maturity; calyx-tube none, the lobes 5–7 cm. long, lance-linear, tapering to an acute point; corolla-tube saucer-shaped, about as long as the calyx-lobes, about 4 mm. broad, the lobes 8 mm. long, ovate, tapering from base to apex, strongly reflexed; crown adherent to the corolla-tube, of five squamae which are fleshy-thickened, upright, oblong with an indistinct lobe on each side near the apex, and a blunt appendage on the inner face, two-thirds the length of the calyx-lobes; anther-appendages white, membranaceous, oval, extending to the base of the branches of the stigmatic appendage, two-thirds as long as the remainder of the column; callosities linear; stigmatic appendage bright red-purple,

five-cleft, the branches nearly 4 mm. long; fruit (in young state) unarmed, puberulent, lanceolate, tapering.

Espirito Santo, 1891 (1254). Perhaps the same as Mandon's no. 858.

VINCETOXICUM UMBELLATUM sp. n. (Sect. Cynoctonum).

Glabrous, except the minutely puberulent inflorescence; branchlets stoutish, faintly striate, the internodes 2–3 cm. long; petioles 7–10 mm. long, slender; blades 3–5 cm. long, 1.5–2 cm. broad, somewhat inequilateral, obtuse, flaccid, the midrib and 3 or 4 primaries conspicuous, the other veins indistinct, coarsely reticulate; peduncles axillary, solitary, scarcely 1 cm. long; umbels about 2.5 cm. in diameter, rather loose, the pedicels nearly as long as the peduncles, acutely angled; calyx 3 mm. long, divided nearly to the base, the lobes lanceolate, tapering to an acute point; glands oblong, scarcely exceeding the tube; corolla-tube about half the length of the calyx, hemispherical or broader, the lobes 4–5 mm. long, ovate, long-acuminate; crown cup-shaped, 2 mm. long and nearly as broad at the summit, free from the corolla, membranaceous, 5-lobed half-way to the base, each lobe again 2-lobed, each of its halves traversed by a rib with projecting and slightly incurved points; stamen-column shorter than the crown; beak of the stigma entire, twice or thrice the length of the stamen-column, much curved or twisted; fruit not seen.

Vic. Sorata, Nov., 1892 (1620). The same as Mandon's no. (356?) and also collected by Pearce in Bolivia.

The solitary pistil is apparently the result of abortion, as a withered second pistil was found in one flower.

Fischeria Martiana Decne. in DC. Prod, 8: 601 (*Gonolobus M.* Hook. f. Bot. Mag. *pl. 4472*). Between Tipuani and Guanai, Dec., 1892. (1654) = Rusby's 936.

LOGANIACEAE.

BUDDLEIA CANESCENS sp. n.

Densely short yellow-tomentose throughout, except the minutely papillose upper leaf surfaces; branchlets elongated, terete, slender, strongly ascending; petioles 1.5–2 cm. long, stout; blades .5–1.5 dm. long, 2–4 cm. broad, lance-ovate, acute, thickish, entire, the venation inconspicuous, the short, crooked primaries communicating near the margin; peduncles .5–1.5 cm. long, stout, the flowers sessile in dense compound capitate cymes, the bracts oblong, mostly about equalling the 4-merous flowers; calyx 5 mm. long, campanulate, glabrous within, the lobes short and broad,

blunt; corolla deep orange (?), the tube about 6 mm. long, campanulate, the lobes half as long, sub-orbicular; anthers sessile in the sinuses, the stout clavate style slightly exceeding them; ovary globose-pyriform, blackish, slightly tomentose at the summit; fruit not seen.

Near snow-line, Mt. Tunari, 1891 (1117).

Desfontainea parvifolia D. Don, Edin. Phil. Journ. (July–Sept., 1831) 275. Vic. Mapiri, 10,000–12,000 ft., Sept., 1892 (1580) = Rusby's 1950.

GENTIANEAE.

Voyria aphylla (Jacq.) Pers. Syn. 1: 284 (*Gentiana a.* Jacq. Amer. *pl. 60. f. 3*). Mapiri, July–Aug., 1892 (1562) = Rusby's 857.

Lisianthus sp. Espirito Santo, 1891 (1242). This will be treated of by Dr. Gilg in a later publication.

Lisianthus calygonus R. & P. Fl. Per. 2: 14. Between Tipuani and Guanai, Dec., 1892 (1697) = 339.

Gentiana primulaefolia Griseb. Gent. 221. Vic. Cochabamba, 1891 (1153).

GENTIANA COCHABAMBENSIS sp. n.

Stems 2–5 dm. long, decumbent or ascending, branched from the base, the internodes 2–4 cm. long, the inflorescence capitate, congested; lower leaves about 5 cm. long, 1.25 cm. broad, oblong-spatulate, the upper oblong and acute; cymes 3 or 4 cm. broad, scarcely as long, densely many-flowered, the flowers short-pedicelled, 5-merous; calyx 7 mm. long, lobed about half way, the tube turbinate, lightly 10-angled, the lobes triangular-ovate, acute, with herbaceous tips, the sinuses of same form, slightly broader, obtusish; corolla (whitish with blue margins?) naked, 1.5 cm. long, 1 cm. broad, lobed three-fourths of the way, the tube turbinate, the lobes oblong with rounded apex, 5-nerved; stamens and pistil reaching to the middle of the lobes, the anthers bluish, small, the stigmas sessile, very short and broad; fruit not seen.

Espirito Santo, 1891 (1232).

GENTIANA BANGII sp. n.

Stems slender and weak, erect or ascending, 2 or 3 dm. high, purple at the base, sparingly branched, the branches erect or ascending, the peduncles elongated, slender; basal leaves none, the cauline 1.5–2.5 cm. long, .5–1 cm. broad, ovate, acute, strongly 3-nerved; flowers 5-merous; calyx 2 cm. long, lobed two-thirds of the way to the base, the tube campanulate, 10-angled, the lobes linear, tapering to a very acute point, 3-nerved, the nerves strongly

papillose, the sinuses of similar form and size; corolla blue, naked and entire, 4 cm. long, lobed to the middle, the lobes obovate, rounded ; stamens and pistil reaching to the middle of the corolla-lobes, the anthers yellow, 4 mm. long, oval, the stigmas nearly circular, 2.5 mm. in diameter.

Turedon, 1891 (1132). Some specimens of another species (perhaps *G. incurva* Hook.) were mixed with this number in distributing and may be recognized by their long (7 cm.) internodes, oblong leaves and triangular calyx-lobes.

GENTIANA MANDONI sp. n.

Erect, slender, 1–3 dm. high, the stems purple at the base, the branches erect and very slender, the internodes about 3 cm. long ; basal leaves none, the cauline 1.5–3 cm. long, 3–8 mm. broad, linear-oblong to ovate, acute, sub-3-nerved ; pedicels slender, exceedingly variable in length, the longest 2 cm., papillose ; flowers 5-merous; calyx papillose, 1–1.25 cm. long, cleft three-fourths of the way to the base, the tube narrowly campanulate, lightly angled, the 3-nerved lobes linear, tapering gradually to a very acute purple point, the sinuses acute; corolla apparently rose-purple, 1.5 to nearly 2 cm. long, about 7 mm. broad at the summit, infundibular-campanulate, the lobes only 5–6 mm. long, obovate, very acute, naked, entire, with darker margins; stamens reaching to the base of the corolla-lobes, in some of the flowers reduced to vestiges 4–5 mm. in length, at the base of the corolla; anthers 2 mm. long; pistil nearly as long as the corolla, the stipe of the ovary as long as the stamens, the style very short, the stigmas strongly flattened, 1.5 mm. long, oval with rounded apex ; fruit not seen.

Vic. Cochabamba, 1891 (1143). The same as Mandon's no. 365. Near *G. Pearcei* Phillippi, from Oranco, Chili, but that has rounded petals.

GENTIANA SPECTABILIS sp. n.

Root stout, erect ; stems several (and basal leaves numerous) from a many-headed crown, erect or ascending, purple at the base, 2–2.5 dm. high, the internodes 3–6 cm. long ; inflorescence virgate-cymose; basal leaves about 1 dm. long, 1 cm. broad, or less, linear-oblanceolate, sub-petioled by the long tapering base, 3-nerved, the apex rounded or blunt; cauline leaves sessile, 2 or 3 cm. long, similar, or lanceolate ; flowers loosely cymose, the pedicels 2–5 cm. long, slightly enlarged upward, sharply angled or narrowly winged; flowers 5-merous; calyx 2 cm. long, the tube one-third of its length, turbinate-campanulate, 8-angled, the lobes lanceolate, tapering from the base to an acute apex; the sinuses

obtuse; corolla deep blue, 2–4 cm. long, campanulate, lobed three-fourths of the way to the base, the tube campanulate, the lobes obovate, rounded, entire, naked; stamens two-thirds the length of the pistil, the filaments flattened, the anthers oblong, attached near their summits and accumbent, naked; pistil two-thirds as long as the corolla, the ovary linear-oblong; style very short and broad, the stigmas semi-circular, recurved; fruit not seen.

Vic. Cochabamba, 1891 (1015).

GENTIANA SEMINUDA sp. n.

Primary root short, stout, diffusely branched; stems tufted, ascending, 1–4 cm. long, almost filiform, 1-flowered or rarely branched; basal leaves spatulate, thickish, .5–1 cm. long, 1.5–2.5 mm. broad; cauline leaves usually but one or two pairs, oblong, obtuse, 1-nerved, 3–5 mm. long; flowers 5-merous; calyx 1 cm. long, lobed to a little below the middle, the tube narrowly campanulate, with 10 purple stripes, those continuous into the lobes broad, the alternate ones very narrow, the lobes linear-lanceolate, tapering gradually to an acutish point, the sinuses about twice as broad, obtusish to blunt; corolla bright blue, 1.5 cm. long, 1 cm. broad, lobed to a little below the middle, naked, entire, the tube campanulate, the lobes obovate, acutish; stamens reaching nearly to the middle of the corolla-lobes, the anthers yellow; pistil equalling the stamens, the stigmas very short and broad; fruit not seen.

Espirito Santo, 1891 (1231). The calyx differs slightly from that of Mandon's no. 363, but it may be the same species. It is very near *G. limoselloides* and also *G. primulaefolia* Griseb., but the sepals are too attenuate for either.

GENTIANA VIRGATA sp. n.

Root stout; stems several, stoutish but weak, ascending, 3–5 dm. long, the internodes 4–6 cm. long; branches short, strictly erect, like the pedicels (2 or 3 cm. long), the inflorescence strictly virgate; basal leaves numerous, grass-like, fleshy, 6–10 cm. long, 5–8 mm. broad, obtusish, the cauline similar, 3 or 4 cm. long; flowers 5-merous; calyx 1 cm. long, lobed two-thirds of the way, the obscurely angled tube turbinate, the lobes triangular-lanceolate, tapering regularly from the base to the acute apex, narrower than the acute sinuses; corolla (yellowish with purple margins ?) 2 cm. long, lobed nearly three-fourths of the way to the base, naked, the tube turbinate, the lobes obovate with subrotund apex; stamens a little more than half as long as the corolla, the anthers blackish, 3 mm. long, oblong; pistil a little exceeding the stamens; fruit not seen.

Espirito Santo, 1891 (1230). Also collected in Bolivia by Bridges.

Tetragonanthus gracilis (Griseb.) Kuntze, Rev. Gen. Pl. 431. (*Halenia gracilis* Griseb. Gen. et. Sp. Gent. 327.) Near snow-line, Mt. Tunari, 1892 (1019).

POLEMONIACEAE.

Gilia laciniata R. & P. Fl. Per. 2: 17. *pl. 123. fig. b.* Near snow-line, Mt. Tunari, 1891 (1029).

HYDROPHYLLACEAE.

Phacelia Peruviana (R. & P.) Spreng. (See 169). Near snow-line, Mt. Tunari, 1891 (1040).

BORAGINEAE.

Cordia Gerasacanthus L. Syst. ed. 10, 936. Between Guanai and Tipuani, Apr.–June, 1892 (1347). Espirito Santo, 1891 (1178) = Rusby's 1902.

Cordia hispidissima DC. Prod. 9: 475. Between Guanai and Tipuani, Apr.–June, 1892 (1436) = Rusby's 1901.

Cordia Salzmanni DC. Prod. 9: 494. Between Guanai and Tipuani, Apr.–June, 1892 (1394). Dec. (1443) = Rusby's 2053 and 2054.

CORDIA RUSBYI Britton sp. n.

A stout much-branched scabrous shrub; petioles 3–5 mm. long, stout; blades 2.5–5 cm. long, 1–2.5 cm. broad, angularly ovate with slightly produced base and obtusish apex, irregularly serrate with mostly blunt teeth, thickish and rigid, densely and harshly tomentose both sides, yellowish-gray underneath, the veins deeply impressed above, prominent underneath, the primaries about 5 pairs, strongly ascending, somewhat crooked; peduncles terminal, but some appearing lateral or supra-axillary, 2–3 cm. long, stoutish, the flowers closely capitate, sessile, the heads 1–1.5 cm. broad; calyx rigid (in flower) 5 mm. long, broadly campanulate, lobed nearly half way to the base, the lobes triangular-ovate, acutish; corolla campanulate with somewhat spreading border, about double the length of the calyx, white; stamens a little shorter than the corolla, the anthers broadly oval; style shorter than the stamens, deeply 2-cleft; fruit about 6 mm. long, broadly ovoid, obtuse, not costate, dark brown with whitish summit, two-thirds included in the calyx.

Near snow-line, Mt. Tunari, 1891 (1110). The same collected by myself at Sorata (no. 2456), concerning which Dr. Britton says, "Related to *Varronia crenulata* R. & P., and in part the same as Mandon's no. 527, under *Lantana*."

CORDIA PAUCIFLORA sp. n.

Branchlets, inflorescence and veins underneath pubescent; branchlets elongated, slender, somewhat angled, the internodes very unequal, about 3–5 cm. long; petioles about 1 cm. long, broad, solitary on stout branchlets 2 or 3 mm. long, which bear the peduncles, the latter thus appearing as though axillary and adnate to the base of the petiole; blades .75–1.5 dm. long, 5–7 cm. broad, ovate, the base abruptly contracted and narrowed into the petiole, the apex abruptly short-acuminate and acute, coarsely and obsoletely serrate, the minute teeth salient and acute; membranaceous, thin, deep green, above slightly shining, the venation not prominent, the primaries about 8 or 10 pairs; peduncles 1 or 2 cm. long, bearing a few loose branches, the few flowers sessile near the tips; calyx open-campanulate, 4 mm. long, cleft nearly to the middle, the teeth ovate, acute, with acute sinuses; corolla 5 mm. long, the tube cylindraceous and slightly contracted in its middle part, the limb open-campanulate; stamens about equalling the corolla, the anthers nearly circular in outline; style about half the length of the stamens, entire; fruit not seen.

Espirito Santo, 1891 (1291).

CORDIA BUDDLEOIDES sp. n.

Branches elongated, stoutish, brown, harshly tomentose; petioles broad, varying from scarcely any to nearly 1 cm. in length; blades 7–10 cm. long, 3–5 cm. broad, ovate with very abruptly contracted base and acute apex, obsoletely serrate-dentate, membranaceous but rigid, above scabrous with deeply impressed veins, underneath strigose, with prominent midrib and about 6 pairs of irregular strongly upwardly curved primaries, the veins coarsely reticulate; pseudo-panicles ample, leafy, the spherical heads distantly racemose upon the branches, less than 1 cm. in diameter, very densely flowered; calyx-tube campanulate, 1.5 mm. long, the lobes 3 mm. long, tapering regularly from the base to the acute apex, strongly reflexed; corolla about as long as the calyx, the margin slightly crenulate; stamens included, the anthers subglobular, the cells at the base slightly divergent; ovary pyriform-obovoid, lightly 4-lobed, 1.5 mm. long, the style nearly 2 mm. long, 4-cleft about a third of the way down; fruit not seen.

Mapiri, July–Aug., 1892 (1530). Near *C. patens* H. B. K.

Heliotropium Curassavicum L. Sp. Pl. 130. Near snow-line, Mt. Tunari, 1891 (1039).

CONVOLVULACEAE.

Ipomoea Batatas Poir. in Lam. Encyc. 6 : 14. Espirito Santo, 1891 (1290).

Ipomoea macrocalyx (R. & P.) Choisy in DC. Prod. 9 : 362 (*Convolvulus m.* R. & P., Fl. Per. 2 : 10). Espirito Santo, 1891 (1279).

Ipomoea pentaphylla (L.) Jacq. Coll. 2 : 297 (*Convolvulvus p.* L. Sp. Pl. ed. 2, 223). Between Guanai and Tipuani, Apr.–June, 1892, (1346).

Ipomoea setifera Poir. in Lam. Encyc. 6 : 17? Espirito Santo, 1891 (1278). Differs from the type in being glabrous and minus the awns to the calyx-teeth ; but in *I. setifera* the degree of development of the latter is variable.

Ipomoea umbellata L. Syst. ed. 10, 924. Mapiri, July–Aug., 1892 (1482). Determination not free from doubt, as the flowers are wanting.

IPOMOEA MAGNIFOLIA sp. n.

Stems terete, glabrate, the younger portions and inflorescence pubescent ; petioles 1–2 dm. long ; blades 1 to nearly 2 dm. long, 1–1.5 dm. broad, regularly ovate, the base cordate with rounded lobes and a sinus of 90 degrees or more, the apex very abruptly contracted into a short attenuate point, very thin, above minutely, underneath manifestly strigose, the primaries about 5 pairs, forking at about two-thirds of their length ; inflorescence very loosely paniculate, the branches of the panicle elongated, thickish, but weak ; pedicels stout, 2 cm. long ; calyx 1.5 cm. long, cleft three-fourths of the way to the base, the lobes erect, ovate, acuminate and acute, finely and obscurely nerved, the outer longer ; corolla open-campanulate, about 8 cm. long, 5 cm. broad, red-purple with whitish tube and throat ; stamens two-thirds the length of the corolla, unequal, the anthers 5 mm. long, 1.5 mm. broad, lance-ovate, sagittate ; style equalling the stamens, the stigma sub-globose, lightly 3-lobed ; ovary 3-celled ; fruit not seen.

Espirito Santo, 1891 (1277). Apparently near *I. pandurata.*

Jacquemontia Blanchetii Moric. Nouv. Pl. Am. *pl. 27.* Between Guanai and Tipuani, Apr.–June, 1891 (1393). Same collected by Dr. Morong in Paraguay.

JACQUEMONTIA ACUMINATA sp. n.

Ferruginous-tomentose throughout, the branches terete, stoutish, the internodes 5–8 cm. long ; petioles 3–5 cm. long, blades 8–12 cm. long, 4–6 cm. broad, regularly ovate, the sinus shallow and broad, the apex abruptly attenuate and very acute, the margin ob-

scurely sinuate; thick, densely tomentose or velutinous both sides, venation indistinct, the primaries about 10 pairs; peduncles stout, at length exceeding the leaves; cyme dichotomous, many-flowered, rather dense, linear-bracted, the pedicels about 5 mm. long; calyx campanulate, about 8 mm. long, the lobes rigid, brownish-green with scarious margins, ovate, sharply acuminate, the outer longer; corolla campanulate, 1.5 cm. long, two-thirds as broad at the mouth, red-purple, 5-lobed, the short lobes acute; stamens half the length of the corolla, the filaments at the base dilated and puberulent, the anthers oval; style a little exceeding the stamens, the stigmas turgid or fleshy, broadly ovoid and blunt, nearly 2 mm. long, deeply channeled on the under side, or perhaps reduplicate; fruit not seen.

Espirito Santo, 1891 (1263).

JACQUEMONTIA PEDUNCULATA sp. n.

Scurfy-pubescent throughout, and the younger portions sparsely pilose; root vertical, stout, terete; stems several from a large crown, elongated, slender, ascending or decumbent; petioles .5 to 1 cm. long; blades 1–2 cm. long, .75–1.5 cm. broad, ovate, obtuse, the margin obscurely sinuate, thickish; peduncles solitary at the nodes, appearing as though axillary, one-flowered or at length loosely several-branched, 5 or 6 cm long, subulate-bracted; sepals erect, 5 mm. long in flower, the inner slightly longer, ovate, acuminate and acute; corolla deep blue, nearly 2 cm. long, campanulate with widely spreading border; stamens 5 mm. long, the filaments slightly dilated and pubescent at the base, the anthers large, oval; style a little longer than the stamens, the stigmas ovoid, turgid; capsule 5 mm. long, globose, brown.

Vic. Cochabamba, 1891 (1067). The same as Glaziou's no. 9971.

Convolvulus Bonariensis Cav. Ic. 5: 54. *pl. 480. f. 2.* Vic. Cochabamba, 1891 (1158).

Evolvulus linifolius L. Sp. Pl. ed. 2, 392. Below Cochabamba, 1891 (1006).

Cuscuta grandiflora H. B. K. Nov. Gen. 3: 123. *pl. 213.* Vic. Sorata, May, 1892 (1304) = Rusby's 2006.

CUSCUTA FRAGRANS sp. n.

Glabrous; inflorescence dense, the flowers sessile; calyx 7 mm. broad when expanded, 5-parted two-thirds of the way to the base, the lobes somewhat unequal, rhomboidally-ovate, blunt; disk deep orange or scarlet, annular, thickish, sinuately lobed, prominent; corolla-tube 4 mm. long, urceolate, the lobes ovate, obtuse, 3 mm. long, strongly reflexed; anthers reaching to the middle of

the corolla-lobes; scales broad, fimbriate, reaching nearly to the base of the anthers; ovary large; styles stout; stigmas large, white, capitate.

Vic. Sorata, May, 1892 (1303). The flowers are very fragrant. It is very near *C. odorata* R. & P., but does not agree with either the figure or the description.

SOLANACEAE.

Solanum argenteum Decne. in Poir. Encyc. Supp. 3: 755? Between Tipuani and Guanai, Dec., 1894 (1699).

Solanum asarifolium Kunth et Bouché, Ind. Sem. Hort. Ber. (1845) 10. Espirito Santo, 1891 (1235).

Solanum Gayanum (Remy) Phil. Cat. Pl. Vasc. Chil. 228. Vic. Cochabamba, 1891 (1151).

Solanum mammosum L. Sp. Pl. 187. Between Tipuani and Guanai, Dec., 1892 (1735).

Solanum nigrum L. (See 539 and 727). Between Guanai and Tipuani, Apr.–June, 1892 (1462).

Solanum nutans R. & P. Fl. Per. 2: *pl. 166*. Between Tipuani and Guanai, Dec., 1892 (1740) = Linden's 218.

Solanum polytrichum Moric. Nouv. Amer. 32. *pl. 22*. Between Guanai and Tipuani, Apr.–June, 1892 (1374) = Salzmann, "Bahia, in collibus," not Sellow's 363.

Solanum Schlechtendalianum Walp. Rep. 3: 61. Mapiri, July–Aug., 1892 (1566). In the many representatives of this species in the Kew Herbarium, the flowers are uniformly smaller and the indumentum less aureous than in Mr. Bang's specimen, but I can hardly regard the latter as distinct. It is the same as Spruce's no. 791 and near Schomburghk's 859, which has a truncate calyx and different anthers.

Solanum styracioides Rusby. (See No. 522.) Between Tipuani and Guanai, Dec., 1892 (1662).

Solanum tuberosum L. Sp. Pl. 185. Vic. Cochabamba, 1891 (1100 and 1101) = Pentland's Titicaca specimen.

Solanum validum Rusby (see no. 972). Vic. Cochabamba, 1891 (1096).

Solanum Wrightii Benth. Pl. Hartw. 243. Vic. Guanai, July, 1892 (1608).

SOLANUM AUREIFOLIUM sp. n.

Glabrous, except the puberulent flowers, shrubby, much and widely branched, the branches light brown, striate, the internodes 2–2.5 cm. long; petioles 1–2 cm. long, broad but weak; blades .75–1.5 dm. long, 3–5 cm. broad, lance-oblong to oblong-ovate, the base blunt, the apex abruptly contracted into a tapering and acute point, thin, drying yellowish-green, the primaries 5–7 pairs, slender, irregular and crooked, the venation very fine and obscure; peduncles 2–3 cm. long, angled, the cyme racemiform, very loose, twisted, the pedicels 1.5 cm. long, faintly striate, at the apex dilated and angular; calyx cup-shaped to saucer-shaped, lobed about half-way to the base, the lobes triangular, acuminate and acute, with broad rounded sinuses; corolla pubescent, 1 cm. long, divided nearly to the base, the lobes oblong-ovate, obtuse, white, translucent and conspicuously reticulate-veined; anthers 7 mm. long, lanceolate, slightly whitish-thickened at the summit, where the small pores look directly upward and are continuous with lateral sutures; style stout, slightly exceeding the anthers, the stigma very small; fruit a little more than 1 cm. broad, red when immature, deep red-purple at maturity.

"Near snow-line, Mt. Tunari" (?), 1891 (1119).

SOLANUM CLAVATUM sp. n.

Glabrous; a much-branched shrub, the branchlets crowded, irregular, short and stout, very leafy, the internodes .5–1 cm. long; leaves 6–15 cm. long, 1–4 cm. broad, lance-oblong, the base tapering into a winged petiole about 1 cm. long, the apex obtusish; the margin entire but irregular, thick and rigid, pale beneath, where the midrib is very stout and prominent, the primaries 10 or 12 pairs, the reticulation indistinct; peduncles 2–5 cm. long, slightly thickened upward; cymes 5 or 6 cm. broad, mostly 10–20-flowered, the pedicels about 2 cm. long, clavate and quadrangular at the summit; calyx-tube proper cupulate, 3 mm. long, 5 mm. broad, the teeth mostly a little longer, narrowly triangular-acuminate, the sinuses broad and rounded; corolla white, finely spotted inside, thickish, 1.5 cm. broad; anthers 5 mm. long, nearly 2 mm. broad, lance ovate, obtuse, straight, the pores directed about equally upward, inward and laterally; style exceeding the anthers by one-half their length; fruit dull, about 1 cm. in diameter.

Near snow-line, Mt. Tunari, 1891 (1118. It appears that some specimens of the next may have been accidentally mixed with this number in distributing). The same species collected on Mt. Chimborazo. The specimens in Herb. Kew bear the number 33, but the name of the collector does not appear.

SOLANUM HIBISCIFOLIUM sp. n.

Yellowish-gray throughout, with dense stellate-scurfy tomentum; branches stout, terete; petioles 4–8 cm. long, stout; blades .75–1 dm. long, .5–1 dm. broad, oval-ovate, the base more or less cordate, the apex barely pointed, acutish, the margin entire but irregularly waving; thickish but flaccid, venation inconspicuous above, the midrib and 5 or 6 pairs of primaries prominent and stout underneath, their secondaries meeting about midway at a broad angle; peduncles stout, 6–8 cm. long, the cymes 6–10 cm. broad, rather densely flowered; pedicels stoutish, 1.5–2 cm. long, erect; calyx about 1 cm. long, the lobes thickish, erect, broadly ovate, acute, with acute sinuses; corolla white, one-fourth or one-third longer than the calyx, thickish; anthers 4 mm. long, oblong, blunt, the cells a little produced at the base, the pores looking directly inward; style 1 mm. longer than the anthers; fruit 1 cm. broad, slightly elongated, sparsely short-stellate.

Vic. Cochabamba, 1891 (1141). Near *S. verbascifolium*.

SOLANUM LINDENII sp. n.

Glabrous, or the twigs puberulent; shrubby, the branchlets erect, stoutish, flexuous, coarsely and bluntly angular, the internodes 2.5–5 cm. long; petioles 1–1.5 cm. long, broad; blades .75–2 dm. long, 4–7 cm. broad, oval, obtuse at both ends, entire, revolute, coriaceous, the venation obscure except the midrib and 7–10 pairs of primaries, the secondaries connecting with the primaries and with the midrib; peduncles 1.5–2 cm. long, the cymes few-flowered, loose, the pedicels 1–1.5 cm. long, slender; calyx-tube hemispherical, 4 or 5 mm. broad, the lobes less than half as long, very broad, acute, with acute sinuses; corolla white, rigid, 7 or 8 mm. long, the lobes oval-ovate, very acute; anthers 5 mm. long, straight, oblong, blunt at both ends, the pores looking inward rather more than upward, prolonged downward into sutures; mature fruit not seen.

Mapiri, July–Aug., 1892 (1526). The same as Linden's 1624 from New Granada and almost Fendler's 978 from Venezuela.

SOLANUM PHYSALIFOLIUM sp. n.

Glandular-pubescent, herbaceous, widely branching, the branches coarsely and sharply angled, the internodes irregular and very unequal; petioles .5–1.5 cm. long, slender and weak; blades 2–4 cm. long, 1–2.5 cm. broad, rhomboidally ovate, acute, coarsely and rather indistinctly sinuate-lobed, thin, flaccid, the venation inconspicuous, the reddish primaries about 5 irregular pairs; peduncles about 1 cm. long, mostly 3–5-flowered, the pedicels 1–1.5 cm. long, weak; flowers white, only 5 mm. long; anthers 2 mm. long, oval, the pores looking upward and inward;

fruiting calyx spreading, 1 cm. broad, the lobes oval, obtuse; fruit green, shining, 1 cm. in diameter, the epicarp very thin.

Vic. Cochabamba, 1891 (1159). Near *S. phyllanthum* Cav.

Solanum symmetricum sp. n.

Glabrous; branchlets erect, rather slender, very flexuous, blackish, the internodes 2–2.5 cm. long; petioles 1 cm. long; blades about 1 dm. long and 5 cm. broad, oval, the base shortly acuminate, apex obtuse; entire, thin but rigid, the midrib and about 7 pairs of primaries prominent beneath, the reticulation fine, indistinct; peduncles mostly solitary at the nodes, 1 cm. long, slender, divergent, the rhachis spiral or cochleate, so as to make the many-flowered cyme sub-spherical; cyme 2.5–3 cm. in diameter, the pedicels slender, about 7 mm. long; calyx open-campanulate, 2.5–3 mm. long and broad, divided nearly midway, the lobes triangular and acutish, the sinuses nearly of the same form; corolla white (with violet center?), rotate, strongly reflexed, 5 or 6 mm. long, deeply lobed, the lobes tapering-ovate; anthers 3 mm. long, straight, oblong and somewhat narrowed toward the base, the pores facing inward, upward and laterally; style a little exceeding the stamens, stout, clavate, the stigma large; fruit not seen.

Mapiri, July–Aug., 1892 (1478).

Solanum velutissimum sp. n.

Shrubby, unarmed, the branchlets short, stout, divergent, terete, blackish, the leaves crowded at their summits, the younger parts, like the inflorescence, petioles and lower leaf-surfaces, densely white stellate-scurfy; petioles .5–1 cm. long, margined; blades 4–10 cm. long, 2–5 cm. broad, oval, acute, thick, above of a bright (slightly yellowish) green and densely velutinous; peduncles 3–4 cm. long, stout, erect, the cyme 6–8 cm. broad; calyx broadly campanulate to saucer-shaped, about 7 mm. broad; divided nearly midway, the lobes triangular-ovate, acute, 3 mm. broad, sinuses acute; corolla (light-blue?) stellate-scurfy without, divided nearly to the base, the lobes nearly 1 cm. long, ovate; anthers 3 mm. long, oblong, lightly curved, the pores looking inward and a little upward; style stout, tapering, stellate-scurfy; immature fruit lightly stellate-scurfy.

Vic. Sorata, 8,000 ft., Nov. 1892 (1627). Near Mandon's 424, but the calyx-teeth are different.

Solanum sp. almost certainly undescribed, but must await flowers.

Near *S. Swartziana*, but the calyx and fruit are different. Vic. Sorata, 1892 (1630). Nearly the same as Rusby's 777.

CYPHOMANDRA UNILOBA sp. n.

Glabrous, except the under leaf-surfaces; branches elongated, weak and apparently reclining; petioles 2.5–5 cm. long, slender; blades 1–2 dm. long, .5–1 dm. broad, ovate, the base inequilateral and somewhat cordate, the apex normally acute, or in some cases shortly pointed, the margin obscurely and coarsely sinuate-lobed, many of the leaves with one large sinus hollowed out near the base upon the larger side, thin, sparsely and very minutely strigose on the lower surface; peduncles 3–5 cm. long, the cyme dichotomous, its branches elongated and racemiform; pedicels 1–1.5 cm. long, angled, dilated at the summit; calyx open-campanulate, 5 mm. long and a little broader, the margin sinuately lobed, rigid; corolla 8–10 mm. or occasionally 15 mm. long, deeply cleft, thickish, the lobes ovate, acuminate; anthers 6 mm. long, ovate, the dorsum lightly outwardly arched, the turgid brown connective entirely concealing the thecae at the back, the pores very small, looking inward, laterally, and a little upward, continuous with fully developed sutures; style very stout, angled, about as long as the anthers, the stigma large, its margin lightly sinuately lobed; fruit not seen.

Mapiri, July–Aug., 1892 (1535).

Bassovia solanacea Benth. & Hook. f. Gen. Pl. 2: 891. Espirito Santo, 1891 (1210). The strigose form.

BASSOVIA INAEQUILATERA sp. n.

Herbaceous; the branches, inflorescence and veins underneath cinereous, the leaf-surfaces sparsely strigose; branches slender, flexuous, angled, the internodes 2.5–4 cm. long; petioles 1 cm. long, broad; blades 1–2 dm. long, 0.5–1 dm. broad, oval-obovate, very inequilateral, the base acuminate, the apex abruptly very short-pointed and acute; entire, very thin, dark-green, underneath paler, the primaries 12–15 pairs, strongly falcate-ascending, reticulation very coarse and inconspicuous; cymes sessile, loosely few-flowered, the pedicels unequal, the longest 1 cm. long, slightly dilated upward; calyx 2 mm. broad, slightly longer, 10-toothed, the teeth very small; corolla-lobes 4.5 mm. long; style 4 mm. long; fruit not seen.

Between Tipuani and Guanai, Dec. 1892 (1708).

The following specimens, seen in Herb. Kew. under *Solanum*, require careful comparison with this plant: Spruce's nos. 4182 and 4849 from Tarapota (but not the finely lepidote specimen from the same place); R. Tate's 262, labeled *Solanum foetidum*, and Gaudot's New Grenada specimen, labeled *S. radiatum*. It is the same as Rusby's 765 from Bolivia.

Capsicum baccatum L. Mant. 116. Turedon, 1891 (1126) (Cult.).

Capsicum frutescens L. Sp. Pl. 189. Espirito Santo, 1891 (1185). Mapiri, July–Aug., 1892 (1474) (Cult.).

Poecilochroma albescens Britton, sp. n.

A low strongly branching shrub, the branches ascending, scurfy, above pubescent; petioles 2 or 3 mm. long, whitish, blades extremely variable in size, in some specimens only .5–1 cm. in length, in others 2 or 3 cm. long, .75–1.5 cm. broad, oval-ovate, slightly inequilateral, obtuse, revolute, thickish, rigid, above glabrous, pale, the veins impressed, underneath very pale or whitish, papillose, the veins prominent; cymes lateral, loosely few- (mostly 3- or 4-) flowered, slenderly peduncled, the pedicles filiform, 1 or 2 cm. long; flowers white, their size proportionately greater in the larger-leaved form, 1.5–2.5 cm. long; calyx 3 mm. long and broad, cleft half-way to the base, the tube broadly campanulate, the lobes triangular-ovate, obtuse; corolla broadly campanulate, the lobes about 7 mm. long and broad, triangular-ovate; filaments inserted into the base, 2 mm. long, the anthers distinct, 4 mm. long, lance-ovate, truncate; style filiform, considerably exceeding the stamens, the stigma inconspicuous.

Vic. Mapiri, 8,000 ft., Sept. 1892 (1575), the form with smaller leaves and flowers. The larger form is Rusby's 2564, from which the above measurements of the dissection are taken.

Salpichroa glandulosa (Hook.) Miers, in Hook. Lond. Jour. Bot. 4: (1845) 325. (*Atropa g.* Hook. Bot. Misc. 2: 230.—Hook. Ic. *pl. 106*). Near snow-line, Mt. Tunari, 1891 (1048).

Lycium paucifolium sp. n.

A much branched, spiny shrub, the branchlets much elongated, slender, flexuous, horizontal or lightly ascending, whitish, glabrous, the spines divaricate, .5–1.5 cm. long, slender, terete, very pungent; leaves .5–1 cm. long, 2 or 3 mm. broad, oblong-obovate, obtuse, with a tapering petiole-like base half as long as the laminate portion, entire, thickish, very minutely scabrous, pale, the veins indistinct; pedicels unequal, the longest nearly 1 cm. long, slender, thickened upward; bud obovoid, obtuse, 4 mm. long; calyx campanulate, striate, 4 mm. long, lobed a fourth or a third of the way to the base, the lobes triangular, acute, the sinuses of the same form; corolla-tube infundibular, twice the length of the calyx, the lobes about 3 mm. long, obovate, obtuse, strongly reflexed; stamens a little exceeding the corolla-lobes; fruit elongated-globose, 5 or 6 mm. long.

Vic. Cochabamba, 1891 (1098). Very nearly, if not, identical with a specimen collected by Jameson in the Argentine.

MARKEA VERRUCOSA sp. n.

Branchlets very stout, densely verrucose with intermediate stellate pubescence; leaves sub-ternately arranged; petioles 5 mm. long, very stout, leaving a nearly circular whitish concave scar 5–7 mm. broad; blades 1.5–2.5 dm. long, .7–1 dm. broad, oval, the base acute, the apex abruptly contracted into a short broad acute point, coriaceous, above so densely and shortly velutinous as to appear glabrous, the veins impressed, underneath densely yellowish short-stellate; peduncle and rhachis together 6 dm. long, or more, verrucose, distantly branched; flowers not seen; fruiting calyx-tube turbinate, 1.5 cm. long, 1 cm. broad, the limb divided nearly to the base, the lobes 4 cm. long, lanceolate, acuminate and acute, coriaceous; apparently purple, reticulate-veined, glabrous; fruit 2 cm. or more in diameter, the pericarp wanting, the very numerous seeds nearly 3 mm. long, ovate, obtusely angled, the base obliquely truncate.

Espirito Santo, 1891 (1294).

Unique in the genus in its very peculiar indumentum.

Cestrum coriaceum Miers in Hook. Lond. Journ. Bot. 5: (1846) 160. Guanai, Dec., 1892 (1634. A few specimens of the fruit perhaps distributed separately as 1414.) Apparently an extreme form of this variable species.

Cestrum strigillatum R. & P. Fl. Per. 2: 29. *pl. 156.* Espirito Santo, 1891 (1189).

CESTRUM FLORIBUNDUM Britton, sp. n.

Glabrous, except for the very slight and sparse puberulence of the inflorescence; branches elongated, coarsely angled at the summit, the internodes about 3 cm. long; petioles 1 cm. long, weak; blades .5–1.5 dm. long, 3–7 cm. broad, regularly ovate with rounded base and acute apex, thin but somewhat rigid, the primaries 7–9 pairs, strongly falcate-ascending, the reticulation very coarse and faint; panicle ample, rather lax, leafy, the branches horizontal; pedicels very slender, 2 or 3 mm. long; calyx open-campanulate, 3 mm. long, lobed to a variable depth, mostly one-fourth to one-third of the way, the lobes broadly ovate, whitish-ciliate-margined; corolla-tube nearly 2 cm. long, 1.5 mm. broad, at the summit abruptly dilated to 2.5 mm., the lobes 6 mm. long, oblong, acute, strongly reflexed, whitish with broad green middle portion; stamens and style about equalling the corolla-tube; fruit not seen.

Espirito Santo, 1891 (1200) and between Guanai and Tipuani, Apr.–June, 1892 (1470). The same Rusby's 818.

Sessea vestita (Hook.) Miers in Hook. Lond. Journ. Bot. 5 : (1846) 155. (*Cestrum v.* Hook. Ic. *pl. 381*). Espirito Santo, 1891 (1164).

Nicotiana glauca Grah. Bot. Mag. *pl. 2837*. Espirito Santo, 1891 (1182).

Nicotiana tomentosa R. & P. Fl. Per. 2: 16. *pl. 129. fig. a.* Vic. Sorata, Nov. 1892 (1625)=Rusby's 2533.

Browallia viscosa H.B.K. Nov. Gen. 2: 373. Mapiri, July–Aug., 1892 (1533.)

Brunfelsia latifolia (Pohl) Benth. in DC. Prod. 10 : 199. (*Franciscea l.* Pohl, Pl. Bras. Ic. 3: *pl. 2.*) Between Guanai and Tipuani, Apr.–June, 1891 (1398)=Rusby's 621.

SCROPHULARINEAE.

Fagelia deflexa (R. & P.) Kuntze, Rev. Gen. Pl. 459 (*Calceolaria d.* R. & P. Fl. Per. 1: 18. *pl. 30.* Near snow-line, Mt. Tunari, 1891 (1038)=Mandon's 455 at Herb. Kew, except for a fragment of some other species.

Fagelia chelidonioides (H.B.K.) Kuntze, (see 720). Near snow-line, Mt. Tunari, 1891 (1018).

Fagelia trilobata (Hemsl.) (*Calceolaria t.* Hemsl. Biol. Cent. Am 2: 439). Espirito Santo, 1891 (1226).

Mimulus glabratus H.B.K., Nov. Gen. 2: 370. A little below Cochabamba, 1891 (1014).

Stemodia pusilla Benth. Bot. Sulph. 144. Between Guanai and Tipuani, Apr.–June, 1892 (1388).

Stemodia pauciflora Ait. Hort. Kew. ed. 2, 4: 52. Between Guanai and Tipuani, Apr.–June, 1892 (1387)= Mandon's 467.

COLUMELLIACEAE.

Collumellia serrata sp. n.

Glabrous; branchlets numerous, 1.5–2 dm. long, slender, tough, erect or ascending, light gray-brown, sharply but irregularly angled, enlarged at the nodes, which are about 1 cm. apart; petioles about 5 mm. long, broad, margined, sharply carinate, the keel extending along the midrib; blades 3–6 cm. long, 1–2 cm. broad, oblanceolate, very inequilateral, the base cuneate, the apex rounded; coarsely serrate, the teeth erect with enlarged purple tips, thick, the veins strongly impressed above, finely reticulate;

cymes terminal, few-flowered, the purple-angled pedicels about 1 cm. long; calyx-tube 3 mm. long, turbinate, purple, angled, the reflexed foliaceous lobes nearly as long as the tube, oval to obvate with rounded apex, 3-nerved, the nerves purple; corolla (yellow) about 2 cm. broad, lobed more than two-thirds of the way to the base, the lobes sub-orbicular, with entire crisped margin; filaments inserted at the base of the tube, very stout, 4 mm. long; the anther large, curved into a globose mass 3 mm. in diameter; disk greenish, of two very broad thick fleshy glands interposed between the stamens, adnate to the bases of the ovary and corolla; ovary fleshy, compressed, 4 mm. broad, the top deeply grooved along the long axis; style brown, about as long as the filaments, very stout, much enlarged at the summit, the stigma nearly 3 mm. broad, peltate, thick, fleshy, white, irregularly lobed.

Espirito Santo, 1891 (1172).

GESNERACEAE.

GLOXINIA REFLEXA sp. n.

Younger portions long-pilose and glandular; stems erect or ascending, coarsely angled, weak, simple, the internodes 4 or 5 cm. long; petioles 2.5–5 cm. long, broad; blades 6–10 cm. long, 4–8 cm. broad, ovate, very inequilateral and the slightly cordate base very oblique, the apex short, acuminate and acute; coarsely crenate-serrate, very thin, bright green, sparsely and minutely hispid-strigose on both sides; peduncles axillary, about 1 cm. long, 5–15-flowered, the pedicels about as long; calyx-tube 7 or 8 mm. long, 2 mm. broad, cylindraceous-infundibular, the reflexed, herbaceous lobes about of equal length, oblanceolate with rounded apex; corolla (purple-white?) pubescent, 2.5 cm. long and broad (as pressed), open-campanulate with rounded ventricose base, and lightly lobed sub-equal sparsely fimbriate margin; stamens shorter than the corolla, the filaments capillary.

Vic. Mapiri, Jan., 1893 (1745). It has no near relative, and its reference to this genus is somewhat doubtful.

ACHIMENES ALBESCENS sp. n.

Finely short-strigose; rhizome oblique; stems ascending, weak, the nodes few and distant; leaves .75–1.5 dm. long, 2–4 cm. broad, inequilateral, oblong, the base tapering gradually into a short petiole, the apex acuminate and acute; entire, very short strigose both sides, above whitish and papillose, underneath purplish; peduncles axillary and terminal, 1-flowered, 3–6 cm. long, very slender; calyx 1 cm. long, lobed two-thirds of the way, the tube broadly turbinate, lobes narrowly lance-linear, the two upper a little shorter and broader, sinuses broad and rounded; corolla purplish-white, pubescent, 1.5 cm. long and half as broad,

the base strongly declined, sub-saccate on the upper side, the body swollen on the lower side, the mouth sub-equal, the lobes 3 mm. long, erect, spreading; ovary short and broad, style stout, pubescent; stigma ovoid, the apex concave; disk annular, short, sinuate.

Espirito Santo, 1891 (1211).

ACHIMENES RUSBYI Britton, sp. n.

Strigose-tomentose and the younger parts long-pilose; a portion of the nearly horizontal rhizome densely imbricated with fleshy scales each 1 cm. long and two-thirds as broad, reddish brown with whitish margins; stem erect, simple, 3–6 dm. or more high, reddish, the internodes .7–1 dm. long, the leaves ternate or opposite below; petioles 1–2 cm. long, slender; blades 5–8 cm. long, 2.5–4 cm. broad, ovate, the base obtuse, the apex tapering and acute, coarsely serrate, the teeth acute, purplish underneath, the venation obscure; flowers apparently only one to several, terminal, and occasionally in the upper axils; pedicels 2 or 3 cm. long, ascending; calyx nearly 2 cm. long, the campanulate tube one-third of its length, the lobes linear or almost setaceous, the sinuses broad and rounded; corolla deep maroon-purple, 4 or 5 cm. long, nearly straight, the base very oblique; narrow basal portion of tube 1 cm. long, 5 mm. broad (as pressed), gradually dilated into the ventricose body, which is 1.25 cm. broad; mouth 2 cm. broad, lightly oblique, the lobes reflexed, beautifully margined and spotted with deep indigo-purple; stamens barely exserted.

Between Tipuani and Guanai, Dec., 1892 (1721) = Rusby's 1102.

ACHIMENES FLACCIDA sp. n.

Rhizome slender; hirsute; stems erect or ascending, slender and weak, sparingly branched or simple, green or purplish below, long-pilose, the internodes about 1 dm. long; petioles only 2–3 mm. long, very broad; blades 6–9 cm. long, 3–4 cm. broad, ovate, short-acuminate and acute, minutely serrate and strongly ciliate, thin and flaccid, pale, strigose underneath and very sparsely so above; peduncles 1-flowered, solitary in the upper axils, and terminal, 2–4 cm. long; calyx 1 cm. long, lobed to or a little below the middle, the tube turbinate, purple (like the peduncle), densely strigose, the lobes green, subequal, lance-ovate, long-acuminate and acute; corolla deep rose-purple, tomentose, 3 cm. long when fully developed, 1.5 cm. broad, as pressed, the base oblique, the narrow basal portion scarcely any, body ventricose, mouth subequal and contracted, lobes small, erect-spreading; stamens and style about as long as the corolla; disk annular, deeply sinuately lobed; style stout, pubescent, stigma ovoid.

Espirito Santo, 1891 (1213).

SEEMANNIA CUNEATA sp. n.

Closely short-strigose and purple throughout; rhizome oblique, short, stoutish, sparsely hairy, bearing short whitish fleshy imbricated scales; stems .5–1 m. or more high, erect, stoutish, simple, the internodes of very irregular length, the upper much elongated; leaves ternate, ovate, 5–8 cm. long, 2–3 cm. broad, the tapering cuneate base passing into a petiole 1–2 cm. long, the apex acute; entire, thickish and sub-rigid, thickly and closely strigose; peduncles stout, erect, about 2 cm. long; calyx-tube turbinate, 4 mm. long, the lobes sub-equal, 6 mm. long, narrowly lance-linear, tapering from the base to an acute point, erect, rigid; corolla scarlet, tomentose, nearly 1.5 cm. long, half as broad, the base oblique, declined and gibbous on the upper side, the body cylindraceous, the mouth slightly contracted, the lobes very short, erect-spreading; stamens nearly equalling the corolla, strongly gibbous at the base; style stoutish, flattened, puberulent, the stigma 2-lamellate, the lobes broadly ovate, obtuse; ovary sub-truncate; disk annular, sinuately lobed; fruit oval-ovoid, 8–10 mm. long.

Espirito Santo, 1891 (1212). The same as Rusby's 1100 but not 1101. It differs from *S. ternifolia* Regel in the cuneate petioled leaves, longer and more rigid peduncles and smaller and narrower flowers. A different species, with leaves rounded at the base and scarcely petioled, was mixed with this in distribution.

Koellikeria argyrostigma (Hook.) Regel. (See no. 275.) Between Tipuani and Guanai, Dec., 1892 (1720).

DIASTEMA LATIFLORA sp. n.

Herbaceous, green or purple, very sparsely short-pilose, flowering when 2 or 3 cm. high, at length 3 dm. high or more, simple or sparingly branched, erect; leaves varying proportionately with the size of the plant, at length 1.5 dm. long and .75 to 1 dm. broad, the broad margined petioles one-third of the length; ovate, the base very abruptly contracted, the apex obtusish, coarsely, irregularly and deeply crenate-serrate, the teeth obtuse, longer than broad, very thin, the venation coarse and broad; pedicels loosely cymose-paniculate, 2 cm. or more long, slender, erect; calyx 7 or 8 cm. long, lobed two-thirds of the way, the tube in fundibular-campanulate, the lobes obovate with rounded apex and acute sinuses, strongly herbaceous, in flower spreading or reflexed, in fruit again erect; corolla (rose-purple?) sparsely hairy, 1.5 cm. long, 1 cm. across the oblique mouth, conspicuously curved, campanulate, lobed nearly to the middle; filaments capillary, purple, nearly equalling the corolla; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1728). The same as a specimen collected in Ecuador by Dr. Sinclair, and one of

those collected in Bolivia by Pearce. Different from Mathews' and Spruce's. Species near *D. urticaefolia.*

Isoloma Sprucei Britton, sp. n.

Strigose; stem rooting at the base, erect or ascending, 3–6 cm. high, branched only at the inflorescence, quadrangular, densely strigose-tomentose, the internodes 5 or 6 cm. long; petioles 2 or 3 cm. long; blades 1–1.5 dm. long, 4–6 cm. broad, oblong, slightly inequilateral, closely serrate, the teeth mostly acute, above bright green and short-strigose, underneath bright purple and sparsely pubescent, the veins densely strigose; peduncles in the upper axils, 2 or 3 cm. long, stoutish, umbellately 5–8-branched, the branches at length nearly as long as the peduncles, 1-flowered, the bracts in the form of small leaves; calyx densely tomentose, 7 or 8 mm. broad, the tube very short, saucer-shaped, the lobes short, broadly ovate to semi-circular, slightly pointed, soon re flexed; corolla tomentose, deep purple, 1.25–1.5 cm. long, the base very oblique, the tube campanulate, ventricose, curved, 7 mm. broad, the somewhat oblique mouth but little broader; fruit 5 mm. broad.

Vic. Mapiri, Aug., 1892 (1541). The same as Rusby's no. 2151. Description taken from Mr. Bang's specimens.

Isoloma parviflora sp. n.

Densely long-pilose throughout; rhizome elongated, purple, not tuberiferous in my specimens; stem apparently ascending, slender, simple, sulcate, the internodes about 4 cm. long; petioles 1–1.5 cm. long; blades 4–8 cm. long, 2.5–5 cm. broad, ovate with rounded base and short-acuminate, acute apex, closely and sharply serrate, densely strigose; flowers few, in the upper axils and terminal, the pedicels slender, 1 or 2 cm. long; calyx-tube 4 mm. broad, hemispherical or shorter, the lobes 4 or 5 mm. long, 2 mm. broad, oblong, obtuse, herbaceous; corolla red-purple, 7 mm. long, 6 mm. broad, the narrow basal portion very short, the oblique mouth much narrower than the body, the reflexed lobes very short and broad; stamens barely exserted; disk of (always?) 8 globose brown glands, 6 of them united into three pairs, the others solitary to right and left of the lower pair; fruit not seen.

Mapiri, July–Aug., 1892 (1563a. Perhaps partly distributed as 1565.). This is very similar to, if not the same as, no. 544 previously enumerated, with doubt, as a *Besleria.* It is very near Spruce's 4962 from Chimborazo.

Alloplectus Patrisii DC. Prod. 7: 545. Espirito Santo, 1891 (1259) = Spruce's 2604, and a specimen in Herb. Kew. marked "ex Herb. Sagot 425."

Columnea Bolviana Rusby (See no. 515). Mapiri, July–Aug., 1891 (1551).

COLUMNEA OBLONGIFOLIA sp. n. (Sect. Pentadenia).

Branches purple, thick but weak, hirsute above, the internodes 2 or 3 cm. long; petioles .5–1 cm. long, very broad; blades .5–1.5 dm. long, 2.5–5 cm. broad, the pair moderately unequal, oblong, inequilateral, the base obtuse, the apex acute; coarsely and shortly serrate, densely short-strigose, purple underneath; pedicels 7–10 cm. long, slender, ascending, recurved; calyx densely strigose, 1.5 cm. long, cleft nearly to the base, the lobes linear-lanceolate, tapering from base to apex; corolla red-purple, tomentose, finely many-nerved, 5 cm. long or more, 1.5 cm. broad (as pressed), the tube short, lightly curved, expanding gradually into the ventricose body, the mouth slightly contracted and lobes erect-spreading, about 1 cm. long; stamens slightly exserted, the anthers globoidal, broader than long; style about as long as the corolla, dilated at the summit, the stigma truncate with circular summit; fruit not seen.

Vic. Mapiri, Jan., 1893 (1744). Near *C. strigosa*.

BESLERIA ROTUNDIFOLIA sp. n.

Glabrous; stems thick but weak, strongly sulcate, the internodes 4–5 cm. long; petioles 3–5 cm. long, broad; blades 1.25 to nearly 2 dm. long, nearly as broad, sub-orbicular, the base broadly cuneate, distantly beset with very small sharp salient teeth; flowers loosely paniculate-cymose in the upper axils and at the summit, the cymes mostly long-peduncled, 3 or 4 cm. long, not bracted, the pedicels .5–1 cm. long, enlarged upward, strongly quadrangular and sulcate; calyx 6 mm. long, 8 mm. broad, the tube very short, saucer-shaped, the lobes unequal and inequilateral, ovate, obtuse, more or less keeled, coriaceous or cartilaginous; corolla red-purple, 1 cm. long, 6 mm. broad, the base oblique and ventricose, the body nearly straight, the mouth slightly contracted, the small oval lobes spreading; stamens short; disk short, cupulate, sinuately lobed, deficient on one side; ovary broadly conical; fruit globose, 5 mm. in diameter.

Espirito Santo, 1891 (1250). Very similar to *B. ovalifolia* Rusby, but certainly distinct.

NAPEANTHUS ANDINUS sp. n.

Sparsely strigose-hirsute; stem rhizomatous, short, stout, the leaves crowded at the summit; leaves .3–1.5 dm. long, 1–3 cm. broad, inequilateral, obovate with long tapering petiole-like base and acute apex, obsoletely serrate, deep green, thin; peduncles filiform, recurved-spreading, 2–5 cm. long, bearing two or three branches, the bracts oblong-lanceolate, 5 mm. long, the pedicels filiform, 1–2 cm. long; calyx 5 mm. long, lobed two-thirds of the

way, the tube broadly campanulate, sharply many-nerved, the lobes triangular-ovate, acuminate and very acute; corolla white (?) the tube 5 mm. long, broadly campanulate, slightly ventricose, the broadly spreading or reflexed lobes nearly as long; fruit globose, brown, nearly as long as the calyx, tipped for some time by the capillary recurved style.

Between Tipuani and Guanai, Dec., 1892 (1729).

NAPEANTHUS RIGIDUS sp. n.

Stem of similar habit to the last, but stouter; leaves .5–1 dm. long, 1.5–3 cm. broad, oblanceolate, with cuncate sessile base and acute apex, coarsely short-serrate, the teeth mostly sharp, thick and rigid, glabrous and glaucous above, sparsely strigose underneath, the midrib and primaries very stout and prominent underneath; peduncles 1–1.5 cm. long, stout, erect, several-flowered, the bracts very thin, the longest 1 cm. long, tapering, lance-linear; pedicels rigid, erect, 1–2 cm. long; calyx 8 mm. long, lobed nearly to the base, sharply many-nerved, the lobes lanceolate, tapering from the base to a pungent apex, rigid; corolla little exceeding the calyx; capsule not more than half the length of the calyx, bright green.

Between Tipuani and Guanai, Dec., 1892 (1729a).

BIGNONIACEAE.

Lundia Spruceana Bureau in Baill. Adansonia, 8: (1867–68) 279. Between Tipuani and Guanai, Dec., 1892 (1672). Leaves slightly thicker and more reticulate than in Spruce's 4489.

LUNDIA PHASEOLIFOLIA sp. n.

Glabrous; branchlets red, striate, the internodes 5–7 cm. long; petioles 3–6 cm. long, slender, striate; leaflets 3, the petiolules .5–2 cm. long, the terminal more than twice the length of the lateral, blades 6–10 cm. long, 4–5 cm. broad, the base cordate, the lateral slightly inequilateral, the apex long-acuminate and acute, membranaceous and thin; bright green, the primaries about 5 pairs, prominent beneath, venation slightly and coarsely reticulate; panicles axillary and terminal, short and broad, the peduncles mostly shorter than the petioles, the slender pedicels about 5 mm. long; calyx of a little deeper yellow than the corolla, 6 mm. long, 5 mm. broad, campanulate, the margin truncate and obscurely sinuate; disk annulate, inconspicuous; corolla puberulent without, 4 or 5 cm. long, 2 cm. broad, not strongly 2-lipped, the mouth scarcely oblique; stamens reaching a little beyond the middle of the corolla, the anthers red-brown, pilose, the thecae divaricate; style about equalling the stamens, the stigma lozenge-shaped, broader above; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1650). Also collected by Pearce in "woods near Salta" (sub *Bignonia* in Herb. Kew). Near *L. corymbifera.*

Bignonia brachypoda DC. Prod. 9: 145. Mapiri, July–Aug., 1891 (1500).

Bignonia impressa sp. n.

Glabrous; branchlets stout, terete; petioles 4–7 cm. long, stout, lightly angled; leaflets 3, the terminal petiolule about 2 cm., the lateral 1 cm. long, semi-cylindrical, hollowed with sharp edges upon the upper side, the blades 1–1.5 dm. long, about 5 cm. broad, the terminal longer, lance-ovate, the base rounded, the apex bluntly acuminate; strongly revolute, coriaceous and rigid, but not thick, dark-green and shining above, pale underneath, veins strongly impressed above, very prominent beneath, the principal primaries 5–7 pairs, the veins strongly and coarsely reticulate; panicle terminal, sessile, the pedicels 1–3 cm. long; disk cup-shaped; calyx thick, 1.5 cm. long, nearly 1 cm. broad at the apex, which is not oblique, campanulate, cleft nearly to the middle, the lobes unequal, entire; corolla 8 cm. long, 5 or 6 cm. broad at the oblique mouth, the tube broadly infundibular, slightly curved and ventricose; stamens reaching a little beyond the middle of the corolla, the style a little longer; style-branches 5 mm. long, oblong, broad, flattened; fruit oblong, 1.5 dm. long, 3 cm. broad, slightly compressed, lightly keeled; seed (exclusive of wing) about 2 cm. broad in each direction.

Between Guanai and Tipuani, Apr.–June, 1892 (1321). Apparently the same as Rusby's 1129, from which the descriptions of the fruit and seed are taken.

Bignonia Pearcei sp. n.

(Sect. *Arrabidaea.*) Ferruginous-hirsute or tomentose throughout; branchlets short and very stout, terete, light brown; petioles 2–3 cm. long; leaflets 3, the petiolules .5–1 cm. long, the terminal one-half longer than the lateral, stout, the blades 1–1.5 dm. long, .5–1 dm. broad, ovate to rotund-ovate, the base very oblique and subcordate, membranaceous but rigid, above very sparingly hairy, underneath abundantly so with the veins and 5 pairs of primaries very prominent, frequently some of the lower primaries forked below the middle; panicles in the upper axils and terminal, short and broad, stoutly peduncled, many-flowered, the pedicels 3–5 mm. long, rather slender; disk cup-shaped, 2 mm. long; calyx campanulate, truncate, with entire border, 5 mm. long; bud obovoid with rounded or obscurely pointed apex; corolla 2.5 cm. long, the oblique mouth 1.5 cm. broad, infundibular-campanulate, puberulent with-

out, bright purple; stamens about as long as the corolla-tube, the anthers linear, the thecae divaricate; fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1391). Also collected by Pearce at Palta. Near *B. Sieberi* DC.

BIGNONIA TECOMAEFLORA sp. n.

Glabrous; branches reddish-brown, striate, the internodes 5–10 cm. long; petioles 1–2 cm. long, angular, the leaflets a single pair, the petiolules half as long as the petioles; blades 5–7 cm. long, 3–4 cm. broad, ovate, the base rounded, the apex short-acuminate and acute, venation inconspicuous, the primaries 5 or 6 pairs, the surface finely pitted; rhachis in the form of a tendril, which is trifid at the summit; panicle ample, broad, lax, the branches sharply angled; pedicels 5–7 mm. long; calyx open-campanulate, 5 mm. long, 5-lobed, the lobes exceedingly short, mucronate; corolla coriaceous, deep red, 6 or 7 cm. long, infundibular, lightly curved and very slightly ventricose, the lobes recurved, oblong with rounded apex, which is pubescent within, the lower one exterior and slightly longer, nearly 2 cm. long; stamens lightly exserted by the recurving of the corolla-lobes, the anthers 4 mm. long, the thecae separated at the rounded base, lanceolate in outline; style slightly exceeding the stamens, the stigma ovate, 3 mm. long; capsule 2.5 dm. long, strongly flattened, smooth, lightly curved, acuminate and acute; seeds (inclusive of the wing) nearly 4 cm. long, 1 cm. broad, light brown with scarious entire margin.

Mapiri, July–Aug., 1892 (1510) and vic. Sorata, Sept., 1892 (1596).

Cuspidaria. The species apparently does not exist at Kew, but the specimens are without flowers. Mapiri, July–Aug., 1892 (1485).

Pithecoctenium Lundii DC. Prod. 9: 196. Between Tipuani and Guanai, Dec., 1892 (1668).

Amphilophium paniculatum (L.) H.B.K. Nov. Gen. 3: 149. (*Bignonia p.* L.; Jacq. Am. 183. *pl. 116.*) Between Tipuani and Guanai, Dec., 1892 (1739)=Morong's 446.

Tecoma mollis H.B.K. Nov. Gen. 3: 144. Vic. Sorata, March, 1892 (1315)=Rusby's 1128.

Crescentia —— sp. Espirito Santo, 1891 (1161).

ACANTHACEAE.

Mendoncia Lindavii Rusby. (See no. 532). Between Tipuani and Guanai, Dec., 1891 (1707).

Ruellia Willdenoviana Nees in DC. Prod. 11: 207. Espirito Santo, 1891 (1199).

Ruellia amoena Nees in DC. Prod. 11: 203. As syn. Espirito Santo, 1891 (1223). Between Guanai and Tipuani, Apr.–June, 1892 (1390).

Ruellia ———*?* Espirito Santo, 1891 (1295). Dr. Lindau denotes this as an undescribed species of the Sect. Thysruellia, and will doubtless supply a description.

RUELLIA BANGII sp. n.

Closely strigose; root vertical, stout; stem erect, widely branching, sharply quadrangular and above narrowly winged, very dark green; petioles 1–2 cm. long; blades .75–1.5 dm. long, 2–4 cm. broad, ovate, varying greatly in comparative breadths, the base tapering acutely into the petiole, the apex acuminate and acute, dark green, thin, closely and rather sparsely (sub-equally on the two sides), short-strigose; calyx 1 cm. long, divided nearly to the base, the lobes unequal, narrowly lanceolate, tapering to an acute pungent apex, ciliate; corolla 4–6 cm. long, the tube slender, curved, the lobes very broad; stamens much shorter than the tube.

Between Guanai and Tipuani, Apr.–June, 1892 (1355).

It is very unfortunate that my material of this interesting species is so scanty and poor that a good dissection cannot be made. A better description will doubtless be given by Dr. Lindau.

RUELLIA GRACILIS sp. n. (Sect. Thysruellia.)

Minutely strigose; stems 2 or 3 dm. high, erect, slender, nearly simple, sharply quadrangular, the internodes 3 or 4 cm. long; leaves sessile, 3–5 cm. long, 3–7 mm. broad, linear-oblong, tapering at both ends, obtusish, entire, bright-green, erect; flowering branchlets 4 or 5 cm. long, very slender, erect, one-flowered or bearing several flowers sessile near the summit; calyx 7 or 8 mm. long, the tube very short, campanulate, the lobes more or less unequal, linear-setaceous, tapering to a very acute point, rigid, bright green, the sinuses several times broader, obtusish; corolla scarlet, 2 cm. long, the narrow basal portion 5 mm. long, dilated abruptly into the body, which is four times as broad, strongly ventricose on the lower side, the lobes short and broad, erect-spreading; stamens inserted near the base of the corolla, reaching to the base of the lobes, the anthers 1.5 mm. long, broad; fruit lance-oblong, acute, green, a little more than 1 cm. long.

Between Guanai and Tipuani, Apr.–June, 1892 (1449).

Sanchesia Peruviana (DC.) (*Ancylogyne P.* DC. Prod. 11: 222.) Mapiri, July–Aug., 1892 (1473).

Lophostachys conferta sp. n.

Minutely and harshly strigose throughout; stems slender and weak, decumbent and rooting at the base, obscurely angled, the internodes about 5 cm. long; leaves 6–12 cm. long, 2–4 cm. broad, oval-ovate, the base abruptly contracted into a margined pseudo-petiole 1–2 cm. in length, the apex about equally acuminate, acute or obtusish; entire, dark green; spikes very dense, 3–7 cm. long, about 2 cm. broad, sessile; bracts 1 cm. long, 4 mm. broad, highly inequilateral, ovate, falcate, abruptly contracted into a pungent acumination, green, with 4 or 5 very strong dark-green nerves, strongly reticulate and ciliate; the 2 larger calyx-lobes broadly obovate, shortly and pungently pointed, scarious with stout green nerves and veins, strongly ciliate, unequal, the larger 1.25 cm. long, nearly 1 cm. broad, cleft to the base; the two smaller setaceous, 6 mm. long; corollas of my flowers withered and unfit for dissection; style, exclusive of ovary, more than 1 cm. long, the stigma small; capsule (immature) on a narrow basal angled portion (stipe ?) nearly as long as the body, which is ovoid, acute, light-brown, glabrous, flattened, the flat surfaces broadly and bluntly keeled.

Vic. Guanai, July, 1892 (1604). The same as Rusby's 1114 from Mapiri.

Aphelandra tetragona (Vell.) Nees in DC. Prod. 11: 295. Between Guanai and Tipuani, Apr.–June, 1892 (1368).

Beloperone Cochabambensis sp. n.

Stem and leaves minutely and harshly strigose, the inflorescence long-pilose; stems elongated, decumbent and rooting at the base, obscurely quadrangular, sulcate, green, branching, the internodes 4 or 5 cm. long; petioles 1 or 2 cm. long, broad; blades .75–1 dm. long, 2–4 cm. broad, ovate, the base acute, the apex regularly acuminate and acute, irregularly sinuate, pale green; spikes solitary and sessile at the summits of the stem and slender branches, dense, the mass of bracts about 3 cm. long and half as broad; bracts leaf-like, 1.5–2 cm. long, 6 mm. broad, obovate, shortly, abruptly and pungently acuminate; calyx 1.25 cm. long, the tube scarcely any, the lobes linear-setaceous, and very pungent, more or less unequal, green and long-pilose; corolla deep red-purple, puberulent, 4 cm. long, the tube infundibular, the lobes 1.5 cm. long; stamens nearly as long as the corolla.

Espirito Santo, 1891 (1215).

Beloperone nuda sp. n.

Coarsely and sparsely strigose, the younger growth pubescent; stems herbaceous, tall, widely branching, obtusely quadrangular

and deeply sulcate, the internodes 4 or 5 cm. long; leaves sessile or sub-petioled by a short margined base, 1–2 dm. long, 4–7 cm. broad, oval-ovate, acuminate and acute at both ends, entire, thin, bright green, the 12–15 pairs of primaries regular, strongly falcate-ascending, the tip of one approximating or touching that next above very close to the margin, faintly connected by the secondaries; panicles axillary and terminal, the peduncles 1 dm. long, erect, angled, the floriferous portion about as long, broad, the subulate-setaceous bracts 2 or 3 mm. long, the pedicels .5–1 cm. long, erect; calyx 1 cm. long, lobed almost to the base, the lobes oblong, acutish, herbaceous but erect; corolla 5 cm. long, infundibular-cylindraceous, the longer lip 2.5 cm. long, its lobes 5 mm. long, rounded at the apex, the middle nearly twice as broad as the lateral, concave-arched, the shorter lip 2 cm. long, entire; stamens reaching to the middle of the lips, the anther-cells strongly overlapping, the caudae short, broad, white and translucent; style 7 mm. shorter than the stamens, the stigma small, obtuse; mature fruit not seen.

Mapiri, July–Aug., 1892 (1511). Species near *B. fragilis*.

Beloperone Bangii sp. n.

Stems erect, stout, terete, minutely strigose, green, swollen and dark purple at the joints, the internodes 3 or 4 cm. long; petioles 1 cm. long, broad, consisting of the abruptly contracted leaf-base; blades .6–1.25 dm. long, 3 or 4 cm. broad, ovate, acuminate and obtusish, entire, very short-strigose both sides, rather pale, drying brownish; spikes axillary and densely aggregated at the summit, dense, 6 or 7 cm. long, about 3 cm. broad, sessile or stoutly peduncled; bracts 2 or 3 cm. long, narrowly linear, tapering regularly to a most acute point, hispid and sparsely hirsute, grayish green; calyx 1.5 cm. long, divided nearly to the base, the lobes narrowly lanceolate or oblanceolate, tapering into an attenuate pungent point nearly as long as the body, keeled, rigid; corolla 5 or 6 cm. long; the tube very slender, the lobes 1 cm. long; stamens reaching to the middle of the corolla-lobes, the anther-cells approximate, appendages at apex and base well developed.

Espirito Santo, 1891 (1224). Apparently the same as Rusby's 1749 from the Beni River region. It appears also to be the same as Traill's 660 from San Antonio on the Madeira.

Justicia Boliviana sp. n. (Sect. Dianthera).

Glabrous, except the sparsely and coarsely strigose leaf-surfaces, especially the upper; stems weak, decumbent and rooting below, obscurely angled, very dark, the internodes 4–6 cm. long; lower petioles 2 or 3 cm. long, very slender; blades 5–10 cm. long,

2–5 cm. broad, oblong to oval-ovate, short-acuminate and acute at both ends, entire, dark green; spikes about 1 dm. long, very slender, erect, the peduncles longer than the petioles, rather loosely flowered; bracts setaceous, green, half as long as the calyx; calyx 1 cm. long, divided nearly to the base, the 4 lobes subequal or becoming very unequal in fruit, lance-linear, attenuate and pungent, green; corolla 1.5 to nearly 2 cm. long, the tube straight, slightly contracted near the middle, the lower lip 8 mm. long, its middle lobe distinctly larger, concave, the upper lip a little shorter, entire, concave; stamens a little shorter than the upper lip, the thecae approximate and subequal; style equalling the upper lip, the stigma small, but distinctly oblique; capsule oblanceolate, 1 cm. long, light brown; seed nearly 2 mm. long, ovoid, flattened, brown, light-muricate.

Espirito Santo, 1891 (1225). Apparently the same collected by Triana in New Granada, and a very similar one by Holton in Bolivia.

Pachystachys Riedeliana N. ab. E. in Endl. & Mart. Fl. Bras. Fasc. 7: 93. Mapiri, July–Aug., 1892 (1555).

Jacobinia tenuistachys sp. n.

Slightly strigose, the inflorescence pubescent, the upper leaf-surfaces glabrous; stems widely branching, the branches slender, lightly angled; leaves sessile, 1.25–2 (or probably more) dm. long, 4–6 cm. broad, ovate, the base slightly inequilateral, the apex acuminate and acute; entire, membranaceous, bright green, the primaries about 10 pairs, very slender, strongly falcate-ascending and connecting close to the margin; panicles in the upper axils and terminal, the slender erect peduncles 6 or 8 cm. long, the branches distant, widely spreading, very slender, the bracts and bractlets very small, varying from setaceous to subulate, the flowers distant and sessile; calyx 4 or 5 mm. long, deeply cleft, green, rigid, the lobes lanceolate, acuminate and acute; corolla scarlet, nearly straight, 2.5 cm. long; the lips nearly equal, 1 cm. long, nearly entire; stamens as long as the corolla, attached at about its middle, the filaments dilated at the base, the thecae parallel, nearly equal, attached at about the middle and separated by a short and broad connective; fruit not seen.

Between Guanai and Tipuani, Apr.–June, 1892 (1441). Nearly, if not the same as Lechler's 3153.

Diapedium multicaule sp. n.

Sub-glabrous; primary root short and stout; stems numerous, erect or ascending from a broad crown, 3–6 dm. high, very slender, sharply quadrangular, green, the internodes 4–5 cm. long;

leaves sessile or on margined petioles 1 cm. long, 3–4 cm. long, 1–2 cm. broad, ovate, acute at both ends, entire, dark green; bracts numerous, 7–8 mm. long, 4 mm. broad, obovate, acute at base, the apex very shortly and very acutely pointed; light green, rigid; bractlets 7 mm. long, lanceolate, tapering to an acute point, scarious, greenish, ciliate; calyx 4 mm. long, scarious, white, the tube 1 mm. long, campanulate, the lobes lanceolate, tapering to a very acute point, ciliate, nerved; corolla pubescent, light purple, 1.5 cm. long, the lips nearly two-thirds of its length; stamens nearly equalling the lobes, the filaments broad, pubescent, the upper sterile theca the larger, broad, white; ovary ovoid-oblong, brown, 2 mm. long.

Vic. Cochabamba, 1891 (1001). The same as Mandon's no. 296.

VERBENACEAE.

Lippia caespitosa sp. n.

Root vertical, slender, much elongated; stems and principal branches stout, very crooked, prostrate and rooting, terete, woody; leaves .5–1 cm. long, 2 or 3 mm. broad, oblanceolate, acute or acutish, very closely strigose or sericeous; peduncles a little shorter than the leaves, weak; heads 5 mm. broad; bracts green, ovate, acuminate and acute, 3 mm. long and nearly as broad; calyx 2.5 mm. long, 2-keeled, the margin truncate, but the keels slightly prolonged, hispid; corolla 4 mm. long, the tube as long as the calyx, cylindraceous-infundibular, nearly straight, very slightly ventricose, the larger lobe orbicular; pistil 1 mm. long, the cylindrico-conical style as long as the broadly ovoid ovary, the stigma small.

Vic. Cochabamba, 1891 (1009. Perhaps some accidentally distributed as 1008.).

Lippia lippioides (Cham.) (*Riedelia lippioides* Cham. Linnaea, 7: 224 = *Lippia Chamissonis* D. Dieterich, Syn. Pl. 3: 598). Between Tipuani and Guanai, Dec., 1892 (1726).

Priva lappulacea (L.) Pers. Ench. 2: 139 (*Verbena l.* L. Sp. Pl. 19 = *Priva echinata* Juss. Ann. Mus. Par. 7: 69). Between Guanai and Tipuani, Apr.–June, 1892 (1375).

Verbena polystachya H.B.K. Nov. Gen. 2: 274. A little below Cochabamba, 1891 (1058).

Petrea bracteata Steud. in Flora (1843), 764. Mapiri, July–Aug., 1892 (1480).

Callicarpa acuminata H.B.K. Nov. Gen. 2: 252. Between Tipuani and Guanai, Dec., 1892 (1669).

AEgiphila tomentosa Cham. Linnaea, 7: 110. Between Tipuani and Guanai, Dec., 1892 (1332) = Rusby's 2516.

AEGIPHILA DENSIFLORA sp. n.

Harshly yellowish-scurfy and strigose; stems elongated, slender and weak, erect or somewhat ascending, obtusely quadrangular, the internodes about 3 cm. long; petioles divaricate, about 5 mm. long; blades 7–10 cm. long, 2–4 cm. broad, oblong, varying to obovate, the base rounded, the apex abruptly acuminate and tapering to a very acute point, short-strigose on both sides, the 10 pairs of primaries very prominent beneath, communicating near the margin and connected by the very crooked secondaries, the reticulation coarse and prominent; panicles stoutly peduncled, close or interrupted, the flowers crowded upon the branches into dense hemispherical secondary panicles, the bracts and bractlets setose, elongated, weak, acute; pedicels slender, mostly 5–7 mm. long; calyx 5 mm. long, the tube 3 mm. long, turbinate, the lips cleft half way, the lobes ovate, obtuse; corolla-bud strongly pyriform, the apex rounded; tube cylindraceous, 6 mm. long, 2 mm. broad, the lobes 3.5 mm. long, broadly ovate with rounded apex; stamens slightly longer than the corolla, but not exserted, attached just below the lobes; ovary black, scarcely 2 mm. long; style shorter than the stamens; fruit not seen.

Between Tipuani and Guanai, Dec., 1892 (1732). Very near *AE. cuspidata* Rusby.

LABIATAE.

Mesosphaerum uncinatum (Benth.) Kuntze, Rev. Gen. Pl. 527 (*Hyptis u.* Benth. Lab. Gen. et Sp. 80). Espirito Santo, 1891 (1236).

MESOSPHAERUM ARBOREUM (?) BRACTEOSUM n. var.

Differs from the type principally in its large oblong or oblanceolate floral leaves, of a brilliant purple on the upper surface, and its calyx of the same color. There is at Kew a specimen by Weir (no. 161) of the same, referred to *M. arboreum*, but it may perhaps better be regarded as a distinct species.

Mapiri, July–Aug., 1892 (1519).

Mesosphaerum lantanaefolium (Poit.) Kuntze, Rev. Gen. Pl. 525 (*Hyptis l.* Poit. Ann. Mus. Par. 7: 468. *pl. 29*). Between Guanai and Tipuani, Apr.–June, 1892 (1425).

Mesosphaerum odoratum (Benth.) Kuntze (See no. 270a). Mapiri, July–Aug., 1891 (1495).

Bystropogon (?) axillare sp. n.

Shrubby and intricately much-branched, the branchlets almost filiform, sharply angled, reddish; leaves .5–1 cm. long, 2–3 mm. broad, lance-oblong, the base tapering into a petiole 1 or 2 mm. long, the apex acutish, entire, revolute, 1-nerved, lightly canescent, green, strongly papillose; peduncles 3 mm. long, 1–3–5-flowered, the pedicels nearly as long, recurved; calyx 2 mm. long, turbinate, green, strongly 15-nerved, nearly equally 5-toothed, the teeth broadly ovate, acute; corolla 3 mm. long, the tube as long as the calyx, straight, broadly cylindraceous, the lobes short, rounded, strongly reflexed; stamens inserted just below the lobes, slightly exserted; style equalling the stamens, lightly cleft.

Turedon, 1891 (1125). Species near *B. andinum* Britton.

Gardioquia grandiflora H.B.K. Nov. Gen. 2: 314. Turedon, 1891 (1127).

Alguelagum tenuiflorum (Benth.) Kuntze (see no. 167). Near snow-line, Mt. Tunari, 1891 (1044).

Alguelagum salviaefolium (H.B.K.) Kuntze, Rev. Gen. Pl. 512. (*Sideritis s.* H.B.K. Nov. Gen. 2: 307.) Near snow-line, Mt. Tunari, 1891 (1108).

Alguelagum auriferum sp. n.

A large stout shrub, finely canescent upon the stems, inflorescence and lower leaf-surfaces; branches thick but weak, obtusely angled, the internodes 5–7 cm. long; petioles 1–2 cm. long, broad, the blades 1.5–2 dm. long, .5–1 dm. broad, ovate, the base blunt, the apex acuminate and acute; finely dentate, the alternate teeth minute, finely bullate and harsh above, underneath canescent and thickly sprinkled with brightly shining golden particles; panicles axiliary and terminal, long-peduncled, very dense; calyx in flower 4 mm. long, 2 mm. broad, campanulate, lobed nearly to the middle, the lobes not very unequal, triangular-ovate, acute, canescent within and without; corolla 5 or 6 mm. long; style slightly exserted, the branches recurved; ovary 1 mm. long and broader at the apex, deeply lobed; fruiting calyx 1.5 cm. long and broad (as pressed); nuculae oval-ovoid, 2 mm. long, 1 mm. broad, deep purple-brown, smooth.

"Near snow-line, Mt. Tunari" (?) 1891 (1107).

Salvia Cochabambensis sp. n.

Finely canescent throughout; shrubby, the branches elongated, erect, slender, purple at the base, sharply angled, the internodes 2.5–5 cm. long; petioles 3–5 mm. long, slender; blades 4–6 cm. long, .5–1 cm. broad, lance-oblong, tapering to a very acute point at both ends, crenate-dentate, thick, erect, the veins strongly im-

pressed above, yellowish and very prominent underneath, the erect primaries about 7 pairs, connected by the secondaries; pedicels stoutish, 3–5 mm. or in fruit about 1 cm. long, distantly racemed, 3–5 together; calyx (in flower) 1.25 cm. long, about 5 mm. broad, campanulate; corolla (deep purple-red?) tomentose, 3–4 cm. long, the upper lip 1.5 cm., the lower 1.25 cm. long, the points 2 cm. apart; style exceeding the stamens, densely pilose, the longer branch about 5 mm. long.

Vic. Cochabamba, 1891 (1059).

Stachys Bogotensis H.B.K. Nov. Gen. 2: 309. A little below Cochabamba, 1892 (1054).

PLANTAGINEAE.

Plantago sericea R. & P. Fl. Per. 1: 51. *pl. 79, B.* Vic. Cochabama, 1891 (1152).

NYCTAGINEAE.

Boerhaavia scandens L. Sp. Pl. 3. A little below Cochabama, 1891. With white flowers (1069) and with purple flowers (1070).

Boerhaavia erecta L. Sp. Pl. 3. Between Guanai and Tipuani, Apr.–June, 1892 (1431) = Rusby's 904.

BOUGAINVILLEA LONGISPINOSA sp. n.

Intricately branching, the branchlets stout, purple, terete, glabrous, very leafy; spines elongated, 1–2 cm., very slender and pungent, divergent; petioles about 5 cm. long; blades 1.5–3 cm. long, .75–1.5 cm. broad, the smaller obovate to oblong, the larger rhomboidally ovate, the base cuneate, apex acute or obtusish; entire, more or less 3-nerved by the exaggeration of the lower pair of primaries, thick, papillose, drying yellowish green; bracts (in fruit) 2 cm. long, or more, 1.5 cm. broad, oval-ovate, the base rounded, the apex blunt (color?); flowers 3, not seen; fruit (mature?) sub-sessile, 1 cm. long, 4 mm. broad, obovoid, triquetrous and sharply angled, green, bearing the marcescent corolla.

Turedon, 1891 (1123). The same collected by Pearce at Catamarca, in Nov., 1863.

Pisonia hirtella H.B.K. Nov. Gen. 2: 217. A little below Cochabamba, 1891 (1063).

AMARANTACEAE.

Chamissoa altissima (Swz.) Kunth in H.B.K. Nov. Gen. 2: 197. *pl. 125.* Between Guanai and Tipuani, Apr.–June, 1892 (1415) = Rusby's 1505.

Telanthera Moquinii Webb. ex. DC. Prod. 13: Part 2, 379. Between Guanai and Tipuani, Apr.–June, 1892 (1359) = Rusby's 1521.

Telanthera Bangii sp. n.

Villous; stems slender and weak, yellowish-green, the internodes 1–1.5 dm. long; petioles about 5–7 mm. long; blades 5–8 cm. long, 2–4 cm. broad, oval-ovate, very short-pointed, acute, entire, the venation inconspicuous; heads 1 cm. long, 8 or 9 mm. broad, ovoid, acutish, somewhat compound; bracts 2.5 mm. long, broadly ovate, concave, scarious, rigid, 1-nerved, very acute; calyx 4 mm. long, purple at the base, the lobes equal, oval-oblong with blunt apex, 1-nerved; androecium 2 mm. long, the appendages of the tube between the stamens oblong, long-fimbriate, a little longer than the filaments; pistil 1 mm. long, the ovary broadly ovoid; style conical; stigma rather large, peltate.

Near snow-line, Mt Tunari (?)1891 (1024).

Philoxerus sp.? Although very different from any other species of the genus, it appears to belong here. My specimens do not afford dissection material, and a positive determination cannot be made.

Mt. Tunari, 1891 (1084).

Gomphrena villosa Mart. Nov. Act. Nat. Cur. 13: (1826) 303. A little below Cochabamba, 1891 (1007). Vic. Sorata, May, 1891 (1301) = Mandon's 1016 and Rusby's 1518. I do not regard this as being the same as *G. perennis* L.

Hebanthe decipiens Hook. f. in B. & H. Gen. Pl. 3: 41 (*Iresine grandiflora* Hook.). Mapiri, July–Aug. 1892 (1521).

CHENOPODIACEAE.

Chenopodium foetidum Schrad. (See no. 799). A little below Cochabamba, 1891 (1004).

Basella rubra L. Sp. Pl. 272. Cochabamba (1062). Turedon (1103). (Cult.)

PHYTOLACCACEAE.

Villamilla rosea-oenia (Lem.)=*Ladenbergia r.* Lem. Illust. Hort. 16: (1869) *pl. 591*. Espirito Santo, 1891 (1292).

Microtea Maypurensis (Kunth,) G. Don; Loud. Hort. Brit. ed. 2, 98. Vic. Guanai, 1892 (1589) = Rusby's 1379.

POLYGONACEAE.

Polygonum lacerum H.B.K. (See no. 130). A little below Cochabamba, 1891 (1051).

Polygonum persicarioides H.B.K. Nov. Gen. 2: 179. Near snow-line, Mt. Tunari, 1891 (1025).

Sarcogonum tamnifolium (H.B.K.). (*Polygonum t.* H.B.K. Nov. Gen. 2: 180 = *Muhlenbeckia t.* Meissn. Gen. 2: 227.) Below Cochabamba, 1891 (1064). Espirito Santo, 1891 (1252).

Triplaris hispida Britton sp. n.

Branchlets purplish, slender, flexuous, fistulous, striate, sparsely long strigose-hispid with red hairs, papillose where these have fallen away; petioles 5–7 mm. long, very stout, erect, and, like the midrib underneath, clothed similarly to the branchlets; leaves 3 dm. or more long, 1 dm. broad, oblong with oblique base and abruptly short-acuminate apex, entire, rigid, glabrous except for the midrib, which is prominent on both sides, sparsely strigose underneath; spikes loosely panicled, with very stout rhachis, about 1 dm. long; bract of the staminate flower (only flowers seen) 3 mm. long, campanulate, at length completely fissured down the lower side, half-way along the upper, long-pilose; perianth pilose, the tube infundibular, 3 mm. long, 1.5 mm. broad at the summit, the lobes nearly 2 mm. long, oval-ovate with rounded apex; filaments long-exserted; fruiting calyx 3 cm. long, the tube 1.25 cm. long, lightly constricted above the fruit, densely ferruginous-hirsute, the lobes dark red, sparsely ferruginous-hirsute, linear-oblanceolate with rounded apex, the inner lobes 7 mm. long; fruit dark red, very sharply triquetrous, the styles stout, triquetrous, recurved-spreading.

Espirito Santo, 1891 (1169, fruit) = Rusby's 1424, from which the description of the flower is taken.

Triplaris Guanaiensis sp. n.

A large tree, the branchlets fistulous, flexuous, light brown, their upper portions minutely verrucose, the inflorescence very densely and long ferruginous-pilose; petioles (only the uppermost leaves seen) 2 cm. long, very stout, channelled above like the midrib; blades 2.5–4 dm. long, .75–1.5 dm. broad, oblanceolate or obovate, the base acute and slightly inequilateral, the apex abruptly short-pointed; entire, thin and membranaceous but rigid, pale and above slightly glaucous, glabrous except upon the midrib of the younger leaves underneath, where there are a few fine hairs, the primaries 20–25 pairs, connected by very slender crooked secondaries; staminate spikes densely panicled, 2–2.5 dm. long, about 6 mm. broad

dense, cylindrical, uniform; bracts 3 or 4 mm. long and broad, ovate; calyx lightly pilose, 3 mm. long, lobed two-thirds of the way to the base, the tube campanulate, purple, the sub-equal lobes lighter, with dark middle portion, widely spreading, oval-obovate, acutish; stamens one-half longer than the calyx, the anthers elliptical-oval, less than 1 mm. long; pistillate spikes .5–1.5 dm. long, the flowers not seen; fruiting calyx densely hirsute, purple, 3.5 cm. long, contracted above the fruit, the outer lobes 2 cm. long, 5 mm. broad, oblong-oblanceolate with rounded apex, the inner 8 mm. long.

Vic. Guanai, July, 1892 (1600 in fruit, 1601 in flower). This is possibly the same as my 1243 from the lower plains, but I think not. That has regularly and broadly ovate cordate leaves which are not glabrous.

PIPERACEAE.

Piper umbellatum L. Sp. Pl. 30. Vic. Guanai, July, 1892 (1607) = Rusby's 2173.

Piper longistylosum C.DC. Bull. Torr. Bot. Club, 21 : (1894) 161. Espirito Santo, 1891 (1233).

Peperomia pseudo-rufescens C.DC. Bull. Torr. Bot. Club, 21 : (1894) 160. Vic. Cochabamba, 1891 (1148a).

Peperomia Mandonii excelsis C.DC. Bull. Torr. Bot. Club, 21: (1894) 160. Vic. Sorata, 1891 (1299).

Peperomia psilophylla C.DC. Bull. Torr. Bot. Club, 21: (1894) 160. Mapiri, 1892 (1516a).

Peperomia umbilicata macrophylla C.DC. Prod. 16: Part 1, 394. Espirito Santo, 1891 (1251a).

Peperomia hispidula (Sw.) A. Dietr. Sp. 1 : 165. Between Tipuani and Guanai, Dec., 1892 (1719).

Peperomia magnoliaefolia (Jacq.) C.DC. Prod. 16: Part 1, 427. Between Guanai and Tipuani, Apr.–June, 1892 (1328).

MYRISTICACEAE.

Myristica sebifera (Aubl.) Swz. Fl. Ind. Occ. 1129. Between Tipuani and Guanai, Dec., 1892 (1678) = Rusby's 1216.

MONIMIACEAE.

Siparuna Sprucei A.DC. Journ. Bot. 3: (1865) 219. Between Tipuani and Guanai, Dec., 1892 (1640) = Spruce's 2777.

Siparuna nigra Rusby (See no. 844). Mapiri, July–Aug., 1892 (1523.)

Siparuna limoniodora (R. & P.) A.DC. Prod. 16: Part 2, 646 (*Citrosma l.* R. & P. = *Citrosma dentata* Poepp. et. Endl., but there is an uncertain *C. dentata* of R. & P. which has precedence. Espirito Santo, 1891 (1183).

LAURINEAE.

(Communicated by Dr. Karl Mez.)

Aniba bracteata (Nees) Mez. Laur. 66 (?) (*Aydendron bracteatum* Nees, Syst. 256 = *A. argenteum* Griseb. Fl. Brit. W. I. 285). Espirito Santo, 1891 (1180). Leaves only. One of the trees yielding "False Coto."

Persea gratissima Gaertn. Fruct. 3: 222. Espirito Santo, 1891 (1162).

Persea Boliviensis Mez et Rusby spec. nov.; foliis longe petiolatis, adultis supra glabris haud vel vix foveolatis, subtus tenuiter tomentellis, bene ellipticis, utrinque subrotundatis; inflorescentia pauciflora, dense adpresseque subferrugineo-tomentella, thyrsoidea, foliis permulto breviore; limbi segmentis valde inaequalibus; androeceo seriebus 2 exterioribus fertilibus, 2 interioribus sterilibus; filamentis ser. I., II., antheras duplo superantibus, pilosis; antheris fertilibus 4-locellatis; ovario glaberrimo, stylo manifeste longiore.

Arbor vel frutex, ramulis dense ferrugineo-tomentellis, subteretibus, gemmis ferrugineo-tomentosis, cortice paullo adstringente, esipido. *Folia* petiolis usque ad 40 mm. longis, supra leviter inciso-canaliculatis, ferrugineo-tomentellis stipitata, sparsa, coriacea, basi saepius minute asymmetrica, ± 0.2 m. longa, 80 mm. lata, penninervia, reti laxo subtus conspicue prominente, costis crasse prosilientibus e nervo medio sub angulo 45–60° prodeuntibus, margine paullo incurvulo. *Inflorescentia* dense ferrugineo-tomentella, brevissima pedunculata, pauciflora, anguste subthyrsoideo-paniculata, petioles paullo superans; pedicellis minutis, 1–2 mm. longis; bracteolis deciduis. *Flores* ± 7 mm. longi, flavescenti-subsericei; limbi segmentis exterioribus quam interiora subtriplo brevioribus. *Filamenta* ser. III., basi glandulis binis parvis, sessilibus praedita. *Antherae* ser. I., II., 4-locellatae, introrsae, ellipticoovatae, apice acutae; ser. III. specie biloculares revera indehiscentes steriles. *Staminodia* sagittata, filamento paullo longiore, dense piloso stipitata. *Bacca* (immatura solum suppetens) globosa, vix 7 mm. diam. metiens, perianthii lobis patentibus insidens.

Habitat in Bolivia ad Tipuani–Guanai, Dec., 1891 (1657, 1733).

Peraffinis *Perseae Peruvianae* Nees, solemniter tamen suis notis distincta.

Endlicheria dysodantha (R. & P.) Mez, Laur. 119. Between Tipuani and Guanai, Dec., 1892 (1676).

Endlicheria Szyszytoviczii Mez, Laur. 121. Between Tipuani and Guanai, Dec., 1891 (1691).

Ocotea Guyanensis Aubl. Pl. Gui. 2: 781. *pl. 310.* Between Guanai and Tipuani, Apr.–June, 1891 (1336 and 1715).

Ocotea Minarum Mart; Nees, Syst. 303. Vic. Sorata, Sept., 1892 (1571).

Ocotea albida Mez et Rusby spec. nov.; foliis rigidiuscule coriaceis, adultis supra glabris subtus omnino albidis perobscureque adpresse tomentellis, ellipticis, utrinque obtusiusculis vel apice obscure lateque acuminulatis demumque rotundatis, penninervibus, supra immerse subtus prominulo-costatis ceterum laevibus; inflorescentia abbreviata, subample paniculata, dense adpresseque tomentella omnino alba vel cinerea, folia subaequante vel iis breviore; filamentis ser. exterioris antheras ovatas, rotundatas sequantibus, dense pilosis; staminodiis stipiti formibus, dense pilosis; ovario in flore ♂ suppetente glabro, reducto.

Arbor vel frutex ramulis tenuissime peradpresseque ferrugineo-tomentellis, junioribus leviter angulatis adultis teretibus; gemmis subsericeo-tomentosis; cortice aromatico, subpiperato. *Folia* petiolis usque ad 15 mm. longis, profunde canaliculatis, glabris stipitata, sparsa ± 1.1 dm. longa, 35 mm. lata, supra bene viridia pernitida; costis e nervo medio sub angulo 45–60° prodeuntibus, margine minute incurvulo. *Inflorescentia* pedicellis vix 2 mm. longis, bracteolis deciduis. *Flores* dioici, ♀ ignoti, vix ultra 2.5 mm. longi, dense albo-tomentelli; perianthii tubo brevi, obconico, apice nullo modo constricto, basi in pedicellum sensim transeunte.

Limbi segmenta brevia, squamiformia, subrotundata, aequalia. *Filamenta* ser. III. basi glandulis binis conspicuis, subcordatis, solemniter stipitatis aucta. *Antherarum* locelli normaliter dispositi. *Fructus* baccatus, fere 20 mm. longus, crasse ellipsoideus, basi cupulae crassae, simplicimarginatae, haud rugosae insidens; cotyledonibus sapore adstringenti- aromatico, quam maxime mucoso.

Mapiri, July–Aug., 1892 (1550). Between Tipuani and Guanai, Dec. (1646).

Obs. Proxima *Ocoteae argenteae* Mez, sed foliorum forma, inflorescentiae dense albo-tomentellae habitu, staminibus valde pilosis, staminodiis conspicuis, glandulis longe stipitatis bene distincta.

Ocotea Bangii Mez et Rusby spec. nov.; foliis chartaceis, glaberrimis, utrinque subnitidis, late ellipticis, basi acutiusculis apice breviter sed manifeste acuminatis, penninervibus, glaberrimis, utrinque sed praesertim subtus prominulo-reticulatis; inflorescentia non nisi fructifera cognita ut videtur pauciflora, abbreviata. *Arbor* vel frutex ramulis glaberrimis, teretibus, gemmis flavido-pilosis, cortice brunneo, esipido. *Folia* petiolis usque ad 15 mm. longis stipitati, ± 0.13 m. longa, 60 mm. lata, sicca olivaceo-viridia, costis e nervo medio sub angulo 50-70° prodeuntibus, margine subpleno. *Flores* ignoti, absque dubio dioici. *Bacca* atra, crasse ellipsoidea, ± 13 mm. longa, 9 mm. diam. metiens, apice optime rotundata nec mucronulata, cupulai pateriformi, simplicimi, laevi, apice sinuatim in pedicellum valde auctum incrassatumque transeunti insidens.

Between Tipuani and Guanai, Dec., 1892 (1674).

Obs. Verisimiliter *Ocoteae laxiflorae* Mez, proxima, cui abhorret cupulae forma.

Nectandra laevis Mez, Laur. 45. Between Tipuani and Guanai, Dec., 1891 (1680).

Nectandra reticulata (R. & P.) Mez, Laur. 404. Between Guanai and Tipuani, Apr.–June, 1892 (1536).

Nectandra Pichurim (H.B.K.) Mez, Laur. 449. Between Guanai and Tipuani, Apr.–June, 1892 (1396).

Nectandra citrifolia Mez et Rusby spec. nov.; foliis adultis glaberimis, supra glauco-viridibus subtus ferrugineo-rubentibus, ellipticis, praesertim apice breviter lateque acuminatim acutis, utrinque minutissime immerse reticulatis; inflorescentia pauciflora brevissime tomentella; floribus hermaphroditis, strigoso-tomentellis, vix 5 mm. diam. metientibus; filamentis staminum ser. exteriorum nullis; ovario glaberrimo, ampulliformi, stylo subnullo.

Arbor vel frutex ramulis junioribus minute strigoso-tomentellis, adultis cortice laevi, cinereo, paullo aromatico obtectis. *Folia* petiolis usque ad 10 mm. longis, permanifeste canaliculatis stipitata, sparsa, chartacea, ± 90 mm. longa, 40 mm. lata, penninervia, venulis tenuissimis immersis neglectis adultis saltem laevia, costis e nervo medio sub angulo 45–55° prodeuntibus, margine minute recurvulo. *Inflorescentia* pauci- (infra 10-) flora, saepissime subracemosa, adpresse minuteque tomentella, foliis multo brevior; pedicellis 2–5 mm. longis, bracteolis deciduis. *Flores* perianthii tubo brevissimo late obconico. *Limbi segmenta* elliptica, acutiuscula vel subrotundata. *Filamenta* ser. III., glabra, basi glandulis binis maximis, compressis aucta. *Antherae* ser. I., II. reniformes apice rotundatae minutissime papillosae locellis omnibus introrsum dehiscentibus. *Staminodia* minuta, stipitiformia. *Ovarium* stigmate obtuso-pulvinato. *Fructus* ignotus.

Between Tipuani and Guanai, Dec. (1673).

Obs. Ex affinitate *Nectandrae Riedelii*, *psammophilae* et praesertim *Brittonii*, floribus tamen permanifeste strigoso-tomentellis, ne reliqua proferam, optime distincta.

PROTEACEAE.

Rhopala Gardneri Meissn. in Mart. Fl. Bras. 5: Part 8, 3. *pl. 31.* Mapiri, July–Aug., 1892 (1528).

PANOPSIS SPRUCEI Meissn. Ms. in Herb. Kew.

Branches light gray, the young growth, like the petioles and inflorescence red-ferruginous-tomentose; leaves sub-verticillate, the petioles stout, broad, 1 cm. long, the blades .75–1.5 dm. long, 2–5 cm. broad, oblong, inequilateral, the base acute, the apex apiculate; entire, thick, bright green above, reddish underneath, prominently reticulate; peduncles terminal, erect, stoutish, bearing solitary or verticillate racemes about 1 dm. long; flowers irregularly distributed, the pedicels 3–5 mm. long, divergent, not bracted; bud clavate-pyriform, obtuse, 3 mm. long; perianth divided to the base, the 3 divisions 4 mm. long, linear-oblanceolate, the apex rounded, strongly recurved and spirally twisted, the stamens nearly as long as the perianth, inserted near its base, the filament nearly as broad as the perianth-division, the anther less than 1 mm. long; pistil red-tomentose, the ovary 1 mm. long, the stout style nearly 5 mm. long, the stigma capitate.

Between Tipuani and Guanai, Dec., 1892 (1686). The same as Spruce's no. 1817 and very near *P. rubescens* Pohl.

Loranthus flexile Rusby (See no. 468). Between Tipuani and Guanai, Dec., 1892 (1659).

Loranthus eugenioides H.B.K. (See no. 6). Vic. Cochabamba, 1891 (1155).

STRUTHANTHUS NUDIPES sp. n.

Glabrous, the leaves papillose on both sides; branchlets slender, terete, grayish-brown; petioles about 5 mm. long, broad; blades 2.5–4 cm. long, 1–2 cm. broad, ovate with rounded base and acute apex, entire, thick and coriaceous, dark-green, the venation indistinct; spikes 4–6 cm. long inclusive of the strongly angled weak peduncles, which constitute from a half to three-fourths of their length, loosely flowered, the flowers ternate, the trio and the flowers sessile, the rigid bracts 1 mm. long, broadly ovate, very acute, bractlets none; bud 4 mm. long, narrowly clavate-pyriform, obtuse; calyx 1 mm. long, the tube hemispherical, the limb reduced to a whitish sub-entire ring; petals six, distinct, 5 mm. long, linear-oblanceolate, obtuse, plane, naked,

recurved and again incurved toward the summit, thick, yellowish; stamens inserted at about one-third above the base, three of them two-thirds the length of the petals, the filaments half as long as the anther, thick, the others nearly as long as the petals, with subulate filaments, the anthers versatile; style stout, about as long as the shorter stamens, the stigma capitate, very small.

Between Tipuani and Guanai, Dec., 1892 (1637). The species is intermediate between *S. polyanthus* and *S. marginatus*. It is the same as Miers' no. 4307, in Herb. Kew. as *S. syringaefolius*, and Burchell's no. 2011 from the Organ Mts. It is not the same as Gardner's no. 53.

Struthanthus Mapirensis sp. n.

Glabrous; petioles 5 mm. long, broad; blades 5–8 cm. long, 1.5–2.5 cm. broad, oblanceolate, acute or obtusish, mostly a little inequilateral, fleshy, pale, the midrib impressed above, prominent underneath, venation inconspicuous; racemes axillary and clustered at the summit, peduncled, .5–1 dm. long, loosely flowered, the peduncle of the trio stout, divergent, 3–5 mm. long, the flowers sessile in the bracts; bracts distinct, large, foliaceous; bud 1.5 cm. long, slenderly clavate, acutish; calyx-tube 3 mm. long, cylindraceous, striate, dark brown, the limb narrow, whitish, spreading, sinuate; petals 6, yellow, 1.4 cm. long, linear, spreading; stamens inserted at the junction of the lower third; filaments nearly as broad as the petals; anthers short, ovoid; style stout, angled.

Mapiri, July–Aug., 1892 (1569). The same as Lechler's no. 2626.

Phoradendron Mandoni Eichl. in Mart. Fl. Bras. 4: Part 2, 124

Between Tipuani and Guanai, Dec., 1892 (1717).

Phoradendron subtrinerve sp. n.

Stems stout, yellowish, the younger portions minutely scabrous, flattened and broadened toward the summits of the internodes, which are 3–5 cm. long; petioles 5–7 mm. long; blades 2–4 cm. long, 1.5–3 cm. broad, rotund-obovate, the base very abruptly contracted, then tapering into the petiole, the apex rounded, the margin crumpled, thick, faintly 3-5-nerved by the prominent primaries; spikes 2 or 3 cm. long, including the stout peduncles, which comprise nearly half the length, erect-spreading; rhachis only slightly thickened, the flowers lightly immersed; flowers (the pistillate only seen) 1.5 mm. in diameter, 3- or 4-parted; perianth-lobes very short and thick, obtusish, slightly recurved; ovary very small, the stigma comparatively large, closely sessile; fruit white, 5–7 mm. broad.

Mapiri, July–Aug., 1892 (1549). This is the same as Fendler's No. 1116, in Herb. Kew. under *P. ellipticum*, and is intermediate between that species and *P. emarginatum*. It is nearly related to a specimen collected by Pearce at Carapai.

EUPHORBIACEAE.

Euphorbia geniculata Orteg. (See no. 232). Vic. Guanai, 1892 (1584).

Euphorbia dentata Michx. Fl. Bor. Am. 2: 211 (?). Vic. Mapiri, 8,000 ft., Jan., 1893 (1743).

Euphorbia lasiocarpa Klotsch, Nov. Act. Nat. Cur. 19: Supp. 1: (1843) 414. Between Guanai and Tipuani, Apr.–June, 1892 (1458) = Mandon's 1063.

Phyllanthus orbiculatus L. C. Rich. Act. Soc. d'Hist. Nat. Par. (1792) 113. Vic. Guanai, July, 1892 (1590) = Rusby's 903.

Phyllanthus lathyroides H.B.K. (See no. 335). Mapiri, July–Aug., 1892 (1518).

PHYLLANTHUS INEQUALIS sp. n.

Glabrous; shrubby, the branchlets light gray, slender; leaves exceedingly unequal, the petioles .5–1.5 cm. long, filiform, the blades 1–6 cm. long, .5–3 cm. broad, ovate or some oval, the base rounded, apex blunt; entire, very thin, pale-green above, glaucous underneath, the venation slender; apparently dioecious, only the staminate flowers seen, these clustered upon short leafless tubercle-like branchlets, the capillary pedicels .5–1 cm. long; perianth 3-bracted, the bracts highly unequal, ovate, obtuse, concave, sub-hyaline, closely appressed; perianth 4–5 mm. broad, whitish, 6-parted, the outer divisions smaller and firmer, oval; disk crateriform with sinuate border, thickish, rigid; ovary none; filaments monadelphous, the anthers forming a circle, 6 or more (rarely 5), small, yellow; rudimentary stigma enclosed by the anthers, circular, peltate.

Between Tipuani and Guanai, Dec., 1892 (1704). Species apparently near *P. nutans* Swartz, and with a structure much like that of *P. Martii*.

Jatropha Curcas L. (See no. 626). Mapiri, July–Aug., 1892 (1558).

Jatropha urens L. Sp. Pl. ed. 2, 1006. Between Guanai and Tipuani, Apr.–June, 1892 (1376).

Jatropha clavuligera Muell. Arg. Linnaea, 34: (1865–66) 209. A little below Cochabamba, 1891 (1083)=Mandon's 1073.

Croton sp. = Pohl's 1613, 1614 in part, and 1624. In Flora Bras., none of these numbers is cited, nor can I find a description to fit the plant, which is near *C. pungens*. But it appears probable that it is somewhere described. Between Guanai and Tipuani, Apr.–June, 1892 (1343).

Croton Rusbyi Britton, sp. n.

A large shrub or small tree; branchlets stout, marked with the prominent triangular leaf-scars; petioles crowded at the summits of the branchlets, .5–1 dm. long, slender, glabrous; blades 1–2 dm. long, .5–1 dm. broad, regularly ovate with rounded base and short-acuminate obtusish apex, entire, membranaceous, deep green, glabrous, the midrib and 6–8 pairs of primaries slender and prominent both sides; panicles in the upper axils, appearing as though clustered at the summit, 2 or 3 dm. long, narrow, on short stout sulcate peduncles, gray-scurfy; bracts subulate, 1 mm. long; pedicels 1–2 mm. long, slender: bud depressed-globose, nearly 2 mm. broad; calyx lobes 2 mm. long, ovate, acute, tomentose both sides; petals about equalling the calyx-lobes, tomentose; stamens (of st. fls.) shorter than the petals, about 15, the filaments filiform, red, pubescent, the anthers globose; ovary (of pist. fls.), 3-lobed upon the summit, gray-scurfy, the red styles 2-cleft two-thirds of the way, the branches strongly recurved.

Between Tipuani and Guanai, Dec., 1892 (1664). The same as Rusby's no. 1224 from Mapiri.

Acalypha mollis H.B.K. Nov. Gen. 2: 94. Vic. Sorata, May, 1892 (1316) = Rusby's 1257, at least in part.

Acalypha flabellifera sp. n.

Coarsely hispid-strigose and slightly ferruginous throughout; branches stout, purplish, the internodes 3–4 cm. long; petioles 3–6 cm. long, very stout, ascending; blades 1–2 dm. long, .75–1 dm. broad, ovate, cordate with mostly closed sinus, acuminate, finely crenate-dentate, sub-five-nerved from the summit of the petiole, the midrib bearing about 5 additional pairs of strongly ascending primaries; staminate spikes axillary, 1–1.5 dm. long, 4 mm. broad, dense, the bracts ovate, acuminate and acute, 2 mm. long; flowers 1.5 mm. broad, densely pilose; pistillate flowers at the base of the staminate spikes, enclosed in bracts which are curved to form two campanulate truncate spathes, a little more than 1 cm. long and broad, herbaceous, numerously and strongly flabellate-nerved.

Near snow-line, Mt. Tunari (?) 1891 (1109). The same collected in Bolivia by Pearce. Species near *A. cuspidata*.

Acalypha sp. probably undescribed, but the buds are in so young a state that a description cannot be drawn up. Vic. Guanai, July, 1891 (1591).

Acalypha —— species near *A. multispicata* Wats. Vic. Cochabamba, 1891 (1081).

Acalypha —— may be the same as no. 676. Mapiri, July–Aug., 1892 (1548).

Manihot Aipi Pohl, Pl. Bras. 1: 29. *pl. 23*. Between Guanai and Tipuani, Apr.–June, 1891 (1364)=Rusby's 886. Vic. Cochabamba, 1891 (1241).

Alchornea triplinervia Muell. Arg. (See no. 210). Between Guanai and Tipuani, Apr.–June, 1891 (1466).

Mabea fistulifera Mart. Reise Bras. 479. Between Guanai and Tipuani, Apr.–June, 1892 (1333).

Dalechampsia scandens L. Syst. ed. 13, 720. Between Guanai and Tipuani, Apr.–June, 1892 (1434)=Rusby's 1347.

URTICACEAE.

Celtis Iguanaeus (Jacq.) Sargent, Silva, 7: 64, ex Rusby Ms. = *Rhamnus I.*, Jacq. Am. 74 (1763)= *Rhamnus aculeatus* Swz. Prod. Veg. Ind. Occ. 53. Mapiri, July–Aug., 1892 (1539).

Chlorophora tinctoria (L.) Gaud. Freyc. Voy. Bot. 508, in note (*Morus t.* L. Sp. Pl. 986). Between Tipuani and Guanai, Dec., 1892 (1652 and 1737) = Rusby's 1284.

Ficus Radula Willd. Sp. Pl. 4: 1144. Between Tipuani and Guanai Dec., 1892 (1665).

Helicostylis tomentosa (Poepp.) (*Olmedia t.* Poepp. Nov. Gen. 2: 32. *pl. 145* (1838) = *Helicostylis Poeppigianus* Trécul, Ann. Sci. Nat. III. 8: 136 [1847]). Between Tipuani and Guanai, Dec., 1892 (1696).

Urera baccifera (L.) Gaud. Freyc. Voy. Bot. 497. Espirito Santo, 1891 (1209). Vic. Guanai, July, 1892 (1609).

Urera laciniata Wedd. Ann. Sci. Nat. III. 18: 203. Vic. Cochabamba, 1891 (1247).

Phenax Sonnerattii Wedd. in DC. Prod. 16: Part 1, 235. Vic. Sorata, May, 1892 (1308).

Phenax globulifera sp. n.

Branchlets and young growth minutely canescent, otherwise

glabrous; branchlets elongated, very slender, terete, light brown, slightly flexuous, the internodes 1.5–2.5 cm. long; stipules 3–5 mm. long, lanceolate, attenuate, brown, scarious and deciduous; petioles .5–1 cm. long, very slender, partially concealed by the inflorescence; blades 6–8 cm. long, .75 to 1.5 cm. broad, lanceolate with sub-rotund base and attenuate apex, coarsely and sharply short-serrate, dark green, strongly 3-nerved, the remaining venation inconspicuous; heads of a rich brown, 7 or 8 mm. in diameter, very dense, closely enveloping the node and the base of petiole; bracts 1.5 mm. long, .5 mm. broad, oblong, obtuse; akene (flowers not seen) less than .5 mm. long, whitish, the stigma more than 3 mm long.

Espirito Santo, 1891 (1191).

Parietaria debilis Forst. Fl. Ins. Aust. Prod. 387. Vic. Cochabama, 1891 (1099).

BURMANNIACEAE.

Burmannia tenella Benth. in Hook. Kew Journ. Bot. 7: (1855) 10. Mapiri, July–Aug., 1892 (1563).

ORCHIDEAE.

(Determined by Mr. R. A. Rolfe.)

Humboldtia ruscifolia (L.) Kuntze, Rev. Gen. Pl. 669. Mapiri, July–Aug., 1892 (1567).

PLEUROTHALLIS COMPLICATA Rolfe sp. n.

Stems slender, terete, 6–8½ in. long. Leaves sessile, ovate-lanceolate, subobtuse, 5–7 in. long, 1–2½ in. broad. Racemes several from the axil of each leaf, the base covered with a persistent sheath, ¾ in. long, slender, longer than the leaves, many-flowered. Bracts tubular-infundibular, obtuse, 1 lin. long. Pedicels 1 lin. long. Dorsal sepal lanceolate-oblong, subacute, 1¾ lin. long; lateral ones connate to apex, subacute, base very concave, 1 lin. broad. Petals linear, acute, 1½ lin. long. Lip orbicular, complicate, the apical half being abruptly deflexed under the basal one, with the rounded sides erect, apex subobtuse. Column short and stout.

Mapiri, n. 1568.

Closely allied to the Venezuelan *P. semipellucida* Rchb. f., and having a similar dwarf lip, which is curled up in the sac of the united lateral sepals, yet the two are quite distinct in various details of the flower.

Hexadesmia Boliviensis Rolfe sp. n.

Stems branched, internodes slender, 3–7 in. long, apex 2-leaved. Leaves linear, obtuse, 4–6 in. long, 2–3½ lin. broad. Flowers in fascicles of 1–4; pedicels slender, 5–7 lin. Bracts lanceolate, acuminate, 1½ lin. long. Sepals lanceolate, acute, 3 lin. long, the lateral ones a little broader and subfalcate. Petals linear-lanceolate, acute, 3 lin. long. Lip obovate-spatulate, 3-lobed, 3 lin. long, 1¼ lin. broad; lateral lobes rounded; front lobe roundish-oblong, emarginate; disc with five slender linear undulate keels. Column slender, arcuate, 2½ lin. long. Chin oblong, obtuse, ½ lin. long.

Between Guanai and Tipuani, n. 1329.

Allied to *H. stenopetala* Rchb. f., but rather stouter, the leaves broader, and the flowers twice as large. The pollen has all been removed, but the plant has precisely the habit of this genus; which, however, closely resembles *Scaphyglottis* in habit.

Epidendrum paniculatum R. & P. Syst. Veg. 243. Mapiri, July–Aug., 1892 (1552).

Epidendrum Schomburgkii Lindl. Bot. Reg. (1838) Miscel. 15. Espirito Santo, 1891 (1284 and 1284a).

Oncidium pusillum (L.) (*Epidendrum p.* L. Sp. Pl. ed. 2: 1352 = *Oncidium iridifolium* H.B.K. Nov. Gen. 1: 344). Between Guanai and Tipuani, April–June, 1892 (1330).

Selenipedium caricinum (Lindl. & Paxt.) Reichb. f. Bonplandia 2: (1854) 116 = *Cypripedium c.* Lindl. and Paxt. Fl. Gard. 1: 39 (1850–51). Espirito Santo, 1891 (1285).

Habenaria maculosa Lindl. Gen. et. Sp. Orch. 309. Espirito Santo, 1891 (1239).

RUSBYELLA Rolfe n. gen.

Sepals suberect, the lateral ones connate for two-thirds their length. Petals suberect. Lip erect, with a long narrow unguis, which is bordered with a narrow membranaceous border below the middle, and above this three tooth-like appendages, two of them lateral; terminal limb broadly cordate. Column footless, clavate, truncate, nearly wingless; anther oblong, stipes of pollen slender.

A new genus allied to *Cohnia* Rchb. f., and *Sigmatostalix* Rchb. f., but differing in various details of the flower. The structure of the lip is very curious.

Rusbyella caespitosa Rolfe sp. n.

Pseudobulbs densely tufted, ovoid-oblong, subcompressed,

12–15 lin. long, apex monophyllous, base diphyllous. Scapes lateral, 6–7 in. long, occasionally with one or two lateral branches, loosely racemose. Bracts triangular-lanceolate, acute, scarcely 1 lin. long. Pedicels 2½ lin. long. Sepals linear-lanceolate, acute, 2½ lin. long. Petals spathulate-lanceolate, acute, 2½ lin. long. Lip 2½ lin. long, limb shorter than the unguis. Column 1½ lin. long.

Specimens without number.

SCITAMINEAE.

Costus spicatus (Jacq.) Sw. (See no. 912) Espirito Santo, 1891 (1248).

Etherium racemosum (R. & P.) Kuntze, Rev. Gen. Pl. 689 (*Amomum r.* R. & P. Pl. Per. = *Renealmia* Rosc. ex Griseb. Flor. Brit. W. I. 601). Espirito Santo, 1891 (1237). Between Tipuani and Guanai, Dec., 1891 (1658).

Calathea Mansonis Koern. Bull. Soc. Nat. Mosc. 35: (1862) Part 1, 119. Between Tipuani and Guanai, Dec. 1892 (1660). Kindly determined by Mr. Spencer Moore.

Calathea Pearcei sp. n. (Sect. Eucalathea).

Glabrous; rhizome horizontal, short, stout; culm sheathed at the base by about 3 obtuse thin scarious finely many-nerved leaf-sheaths; culm 3–6 dm. high; leaf-sheaths 4 or 5 cm. long, extended on each side into a blunt appendage 3 mm. long, at the base of the petiole, which is 5 mm. long, very stout and tomentose upon the upper side; blades .75–1.5 dm. long, 3 or 4 cm. broad, oval-ovate, acute, pseudo-pinnately-veined; peduncle 6–10 cm. long, sharply striate; heads 1.5–3 cm. broad, the bracts 1 cm. long, broadly ovate, obtuse, finely many-nerved; flowers a little more than 1 cm. long, the corolla double the length of the calyx, the petals, especially the larger, crenate.

Between Tipuani and Guanai, Dec., 1892 (1723a). Collected by Pearce at Yungas, 3000–4000 ft., Jan., 1866. The same as Rusby's no. 2233.

Canna glauca L. Sp. Pl. 1. Espirito Santo, 1891 (1281.)

BROMELIACEAE.

(Communicated by Mr J. G. Baker.)

Pitcairnea Lehmanni Baker, Handb. Brom. 164. Between Guanai and Tipuani, Apr.–June, 1892 (1352).

Pitcairnia (Puyopsis) Bangii Baker, sp. n.

Basal leaves ensiform, very rigid, 2½–3 ft. long, 1½ in. broad at the base, narrowed gradually to the point, glabrous on both surfaces, armed on the margin with curved ascending brown horny slender spines ⅛ in. long. Inflorescence panicled; racemes lax, subsecund, reaching a length of 8–9 in.; their rachises white-floccose; branch-bracts oblong, cuspidate, serrated, 2–3 in. long; flower-bracts ovate-cuspidate, scarious, glabrous, 1–1¼ in. long; pedicels ½–¾ in. long, white-floccose like the rachis. Sepals lanceolate, glabrous, above 1 inch long. Petals protruded ½ inch beyond the calyx, curled up spirally as the flowers fade.

Near *P. Rusbyi* and *P. Weddeliana* Baker, Handb. Bromel· 122, both plants of the Bolivian Andes. Vic. Sorata, Nov. 1892 (1631).

Puya mollis Baker, sp. n. (ex Mez Mon. Brom. 488).

Basal leaves ensiform, very rigid, 2½–3 ft. long, 2 in. broad at the base, tapering gradually to a long point, quite glabrous on both surfaces, armed on the margins with curved ascending horny prickles, those at the base of the leaf ¼ in. long, the upper growing gradually smaller. Inflorescence panicled; spikes moderately dense, 4–6 in. long; rachis and bracts clothed with soft white woolly pubescence; flower-bracts oblong-mucronate, entire, the upper 1 in., the lower above 1½ in. long; pedicels densely pubescent, ⅓–½ in. long; calyx densely persistently pubescent, 1 in. long; sepals oblong, obtuse, much imbricated. Petals oblong, unguiculate, obtuse, twice as long as the calyx, apparently greenish-white. Stamens distinctly shorter than the petals.

Near *Puya vestita* Andre; Baker, Handb. Bromel. 125. Vic. Sorata, Nov., 1892 (1629).

Guzmannia monostachya (L.) Rusby, ex Mez Mon. Brom. 905. = *Tillandsia m.* L. *fide* Baker, Handb. Brom. 152 = *Guzmannia tricolor* R. & P. Fl. Per. 2: 38. *pl. 26*. Vic. Mapiri, 10,000 ft., Sept., 1892 (1582).

Tillandsia recurvata L. Sp. Pl. 287. Vic. Cochabamba, 1891 (1154a) = Mandon's 1177. (Dr. Mez regards this as *T. Cordobensis* Hieron.)

Tillandsia stricta Soland. et Sims. Bot. Mag. *pl. 1529* (1813), *not* Lindley, 1830. Vic. Sorata, Nov., 1892 (1628). (Dr. Mez regards this as *T. pulchella rosea* Mez.)

Tillandsia (Allardtia) Bangii Baker, sp. n.

Basal leaves lanceolate, entire, chartaceous, ½ ft. long, 2 in.

broad at the middle, narrowed gradually to the acute point, hardly at all lepidote on either surface, concolorous; panicle lax, deltoid; spikes dense, distichous, sessile or shortly peduncled, about ½ ft. long, 1¼ in. broad; lower branch-bracts with a long green lanceolate point; upper short, scarious, red; flower-bracts oblong-navicular, much imbricated, naked, stamineous, 1–1¼ in. long, ¾ in. broad, with a deltoid acute tip; calyx glabrous, as long as the flower-bracts; limb of the petal oblong, very small; stamens shorter than the petals.

Nearly allied to the Columbian *T. Kalbreyeri* Baker, Handb. Bromel. 28.

Espirito Santo, 1891 (1283). (Dr. Mez regards this as *T. paniculata* Ch. & Sch.)

HAEMODORACEAE.

Xiphidium floribundum Swz. Prod. Veg. Ind. Occ. 1: 17. Espirito Santo, 1891 (1280).

IRIDEAE.

Cypella Peruviana Baker, Bot. Mag. sub. *pl. 6213*. Vic. Cochabamba, 1891 (1157). Vic. Sorata, May, 1892 (1318) = Specimens by Pentland, not Mandon's 1223.

Cypella Mandoni sp. n.

Glabrous; bulb tunicated, ovoid-lanceolate, purple, conspicuously nerved; stems 1 m. or more high, very slender, purple at the base; leaves lightly sheathing, grass-like, about 1 cm. wide, strongly channelled, acute, exceeding the stem; peduncles axillary, stout, erect, 1–1.5 dm. long; spathes 2, ovate-lanceolate, acute, about 4 cm. long, 1 cm. wide, green, very finely many-nerved; bracts scarious, as broad as the spathes and slightly exceeding them; flowers 4 or 5, completely exserted, blue, nearly 3 cm. long, the triquetrous ovary 5 mm. long; capsule (immature) green, tipped with a short conical broad brown point.

Vic. Cochabamba, 1891 (1077). The same as Mandon's no. 1223, but not the same as Pentland's. In Herb. Kew. Mandon's specimen is doubtfully referred to *C. Peruviana*, but the width of leaves, size of spathe and color of flowers show that it is distinct.

Nemastylis nana Wats. Proc. Am. Acad. 18: 160. Near snow-line, Mt. Tunari, 1891 (1042) = Type in Herb. Kew., also (?) Mandon's 1224.

ORTHROSANTHUS NIGRORHYNCHUS sp. n.

Glabrous; rhizome stout, purple; basal leaves distichous, equitant, 3–4 dm. long, erect, rigid, linear, very narrow, acute; stems about 1 m. high, erect, slender, simple or branched; cauline leaves shorter than the stem, similar to the basal, long-sheathing; spathes racemose, the peduncles solitary in the axils of the upper leaves, shortly exserted; spathes 2, ovate, acute, 1.5 cm. long, enclosing one or more scarious bracts and a single sub-sessile white flower, which is 2.5 cm. long, the ovary 1 cm. long, black, oblanceolate, truncate; capsule lanceolate, truncate, the summit blackish.

Vic. Cochabamba, 1891 (1074).

Sisyrinchium junceum E. Meyer in Presl, Rel. Haenk. 1: 118. Vic. Cochabamba, 1891 (1075) = Mandon's 1222.

SISYRINCHIUM CRYPTOCARPUM sp. n.

Glabrous; stems densely tufted, the basal leaves, some longer, some shorter, than the stems, linear-terete, very slender, very acute; stems very slender, .75–1.5 or even 2 dm. high, terete; spathe green, setaceous, longer than the inflorescence, mostly 3-flowered, the flowers enclosed in scarious bracts with setaceous green awns, or the inner awnless; flowers not seen; capsule scarcely exserted, folded in the scarious bracts, black, obovoid, 4 or 5 mm. long.

Vic. Cochabamba, 1891 (1073). In the absence of flowers this is doubtfully referred to this genus, near *S. filifolius*. It is not impossible that it is an *Orthrosanthus*, which the inflorescence-habit more closely resembles. If so, it is quite distinct from any other species.

AMARYLLIDEAE.

Hippeastrum Mandoni Baker, Handb. Amaryll. 49. Vic. Sorata, Nov., 1892 (1624) = Rusby's 2454.

Bomarea distichyophylla (Herb.) Baker, Journ. Bot. 1882, 202. Between Tipuani and Guanai, Dec., 1892 (1722) = Rusby's 571 and 574.

VELLOZIA (XEROPHYTA) BOLIVIENSIS Baker, sp. n.

Stems short, slender, woody, covered downward with the persistent imbricated lanceolate bases of the old leaves; produced leaves many, crowded, narrow, linear, ascending, 6–9 in. long, tapering from a lanceolate base to a subulate tip, conduplicate, firm in texture, bristly and serrulate on the edges; peduncle shorter than the leaves, slender, 1-flowered, more or less bristly, especially upward; ovary subglobose, densely clothed with ascending bristles; segments lanceolate-conduplicate, an inch long,

bristly outside; stamens 6, shorter than the perianth-segments; anthers linear, nearly ½ in. long.

No other species of this genus is recorded from the Bolivian Andes, but there are a large number in the interior of Brazil and the rest are African.

Turedon, 1891 (1134).

DIOSCOREACEAE.

Dioscorea convolvulacea Ch. & Sch. Linnaea, 6: (1831) 49? Espirito Santo, 1891 (1296) = Fendler's 2171 and nearly his 1541.

Dioscorea —— in too young a state. Between Guanai and Tipuani, Apr.–June, 1892 (1379).

Dioscorea—species in all probability undescribed, but my material is insufficient for a description. Espirito Santo, 1891 (1264).

LILIACEAE.

ANTHERICUM SPRENGELI (*Phalangium ciliatum* Kunth, in H. & B. 1: 276 (1815) = *Anthericum ciliatum* Spreng. Syst. 2: 84 (1825), not L. f. Supp. (1781). A little below Cochabamba, 1891 (1061).

Nothoscordum flavescens Poepp. in Kunth, Enum, 4: (1843) 459 (*Allium f.* Poepp. Hort. Berol. 837). Below Cochabamba, 1891 (1060).

COMMELINACEAE.

Tradescantia elongata G. F. W. Meyer, Esseq. 146. Espirito Santo, 1891 (1282).

Campelia zanonia (L.) H.B.K. Nov. Gen. 1: 264. Between Guanai and Tipuani, Apr.–June, 1892 (1412) = Rusby's 1228 and 1229.

JUNCACEAE.

Juncus brunneus Buchen. (See no. 73). Below Cochabamba, 1891 (1076).

PALMAE.

Iriartea ventricosa Mart. Hist. Nat. Palm. 2: 37. *pl. 35, 36?* Between Tipuani and Guanai, Dec., 1892 (1734).

AROIDEAE.

Spathantheum Orbignyanum Schott, Bonplandia (1859) 165. Vic. Sorata, Nov., 1892 (1626). Determined by Mr. N. E. Brown.

CYPERACEAE.

(Determined by Prof. N. L. Britton.)

Cyperus vegetus Willd. Vic. Cochabamba, 1891 (1072).

Eleocharis sp. Too young for determination (1503).

Rynchospora paniculata Liebm. Vic. Cochabamba, 1891 (1071).

Rynchospora glauca Vahl. Between Guanai and Tipuani, Apr.–June, 1892 (1426).

GRAMINEAE.

(All of the numbers pertaining to this order will be published together in a later part of the enumeration).

MARSILEACEAE.

Azolla Caroliniana Willd. Near snow-line, Mt. Tunari, 1891 (1032 and 1033 mostly).

SELAGINELLACEAE.

Selaginella polycephala Baker. Espirito Santo, 1891 (1287).

Selaginella haematodes Spreng. Espirito Santo, 1891 (1286).

Selaginella microphylla Spreng. Vic. Cochabamba, 1891 (1097).

FILICES.

(Determined by Mrs. E. G. Britton.)

Hymenophyllum polyanthos Swz. Between Guanai and Tipuani, Apr.–June, 1892 (1384). Mixed with this is a species of *Lepidozia* and of *Bazzania*.

Adiantum obliquum Willd. Between Guanai and Tipuani, Apr.–June, 1892. (1440).

Pellaea marginata Baker. Vic. Cochabamba, 1891 (1094).

Pteris gigantea Willd. Vic. Tipuani, Dec., 1892 (1632).

Blechnum occidentale L. Vic. Guanai, July, 1892 (1594.)

Asplenium serratum. Between Guanai and Tipuani, Apr.–June, 1892 (1350).

Asplenium rhizophorum cicutarium Sw. (Specimen without number, locality or date) = Rusby's 389.

Polypodium serrulatum Mett. Between Guanai and Tipuani, Apr.–June, 1892 (1381).

Polypodium Plumula H.B.K. in a young state. Between Guanai and Tipuani, Apr.–June, 1892 (1448).

Polypodium angustifolium Swz. Espirito Santo, 1891 (1288).
Notholaena hypoleuca Kunze. Vic. Cochabamba, 1891 (1093a).
Platymiscium andinum Baker. Between Guanai and Tipuani, Apr.–June, 1892 (1414).
Aneimia phyllitidis Swz. Between Guanai and Tipuani, Apr.–June, 1892 (1351).
Aneimia trichorhiza Gardner? Vic. Cochabamba, 1891 (1093).
Lygodium venustum Swz Between Guanai and Tipuani, Apr.–June, 1892 (1349) = Rusby's 143.

MUSCI.

Polytrichum conforme Mitt. Mapiri, July–Aug., 1892 (1546).
Leucobryum giganteum C. Müll. Mapiri, July–Aug., 1892 (1505).

HEPATICAE.

(Determined by Prof. L. M. Underwood.)

Asterella sp.? Immature and not to be determined with certainty. Mapiri, July–Aug., 1892 (1545).
Aitonia valida. Vic. Mapiri, Jan., 1893 (1748).

LICHENES.

(Determined by Dr. J. W. Eckfeldt.)

Cladonia pyxidata (L.) Fr. Vic. Mapiri, Jan., 1893 (1762).
Cladonia gracilis verticillata Fr. Vic. Mapiri, Jan., 1893 (1763).
Cladonia botryella Nyl. Vic. Mapiri, Jan., 1893. (1761). *pp.*
Cladonia fimbriata (L.) Fr. (1761). *pp.*
Peltigera rufescens (Neck.) Hoffm. Vic. Mapiri, Jan., 1893 (1754, *pp.*; downy above).
Peltigera canina membranacea (Ach.) Nyl. Vic. Mapiri, Jan., 1893 (1754 *pp.*; smooth throughout and more or less fibrillose beneath).
Parmelia citrata Ach. Vic. Mapiri, Jan., 1893 (1750). *pp.*
P. praetervira Muell, Arg. Vic. Mapiri, Jan., 1893 (1750). *pp*
Theloschistes chrysophthalmus (L.) Norm. Vic. Sorata, May, 1892 (1316a).
Theloschistes chrysophthalmus flavicans Wall. Vic. Mapiri, Jan., 1893 (1755).

Usnea barbata florida Fr. Vic. Mapiri, Jan., 1893 (1749).
Sticta pallida Hook. Vic. Mapiri, Jan., 1893 (1756).
Sticta quercizans Peruviana? Vic. Mapiri, Jan., 1893 (1751 *pp.*).
Sticta (*Ricasolia*) *corrosa* Sch. Vic. Mapiri, Jan., 1893 (1760).
Leptogium pulchellum (Ach.) Nyl. Vic. Mapiri, Jan., 1893 (1753).
Leptogium phyllocarpum (Pers.) Eckfeldt (*L. bullatum phyllocarpum* Pers.) Vic. Mapiri, Jan., 1893 (1752).
Cora pavonia Fr. Vic. Mapiri, Jan., 1893 (1759).
Physcia leucomella (L.) Michx. Vic. Mapiri, Jan., 1893 (1751).
Physcia hypoleuca (Mühl) Tuck. Vic. Mapiri, Jan., 1893 (1757).
The same covered with *Biatora* (*Abrothallus*) *oxyspora* (Nyl.) Tul. Vic. Mapiri, Jan., 1893 (1758).

FUNGI.

(Determined by Prof. W. G. Farlow.)

Hexagonia tenuis Hook. Between Guanai and Tipuani, Apr.–June, 1892 (1327).
Polyporus Floridanus Berk. Between Guanai and Tipuani, Apr.–June, 1892 (1325).
Polyporus sanguineus Fr. Between Guanai and Tipuani, Apr.–June, 1892 (1323).
Lenzites striata Fr. Between Guanai and Tipuani, Apr.–June, 1892 (1322, *pp.*).
Polystictus flavidus Berk. Between Guanai and Tipuani, Apr.–June, 1892 (1322, *pp.*).
Polystictus occidentalis (Klotsch) Fr. Between Guanai and Tipuani, Apr.–June, 1892 (1324). The form which has been called *P. byrsimus* Mont.
Hypolyssus Montagnei Berk. Mapiri, July–Aug., 1892 (1479).
Dimerosporum sp. Mapiri, July–Aug., 1892 (1547).
Agaricini, not in a condition to be determined, are nos. 1326, 1447 1498, 1747, 1765 and 1769.
No. 1570 is an indeterminable mixture of fresh-water algae.
Nos. 994, 1540, 1542, 1764, 1766, 1767 and 1768 are galls.

WELLESLEY COLLEGE LIBRARY
3 5002 03306 3103